

Abstraction. Aligning. Autotheory. Becoming. Being. Between. Binary. Body. Boundaries. Building. Coding. Collaboration. Communication. Composing. Computer. Common. Contemporary. Conceptual. Critical. Culture. Design. Duality. Delineations. Discourse. Difference. Editing. Embodiment. Entanglement. Entities. Environment. Error. Ethics. Experience. Failure. Feminism. Fiction. Functioning. Gender. Generative. Glitch. Hardware. Heterogeneity. Histories. Human. I. Identity. Ideology. Indeterminacy. Individual. Internet. Information. I.T. Interface. Intra-activity. Inhuman. Intersectional. Knowledge. Language. Logic. Make. Machine. Matter. Materiality. Meaning. Movement. Mixing. Natu@e. Nonhuman. Norm. Neutral. Noise. Object. Operating System. Organism. Origin. Other. Perception. Performance. Phenomena. Poetry. Political. Postdigital. Posthuman. Postmodern. Power. Practice. Praxis. Process. Progress. Queer. Reality. Recording. Relations. Resistance. Scripting. Scrolling. Searching. Sense. Separation. Sexuality. Situated. Social. Softening. Software. Sound. Speculative. Storytelling. Subjectivity. Technovision. Technofeminism. Technology. Theory. Tool. Uncertainty. Video. Visual. Women. Worlds. Writing.

MA Thesis
Robynn McPherson
Department of Media
Visual Communication Design Programme
Aalto University School of Art, Design and Architecture
Autumn 2020 – Helsinki

OS/error

OS/error: Operating system for the human, the computer, and the environment

by Robynn McPherson





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Abstract

This practice-based master's thesis contains a written text and design outcome and uses applied visual communication design research with a feminist methodology and theoretical framework. I ask: “*How can I communicate the softening boundaries of and between the human, the computer, and the environment, by way of technofeminism and visual communication design?*” The work unfolds from my situated history and embodied knowledge and is an effort to draw attention to the socio-political power that operates through technology.

In the written text, I assemble a chronicle of historical and contemporary works of art and visual communication design to present a technofeminist communication of softening boundaries. Furthermore, I think with various writers and articulate technofeminism as a significant discourse today. Finally, I frame both autotheory and mixing as methods rooted in feminist theory and science and describe their creative application to the video, poetry, and sound of *OS/error*.

The practical outcome *OS/error* is a six-mode conceptual operating system that poetically performs: Searching, Functioning, Building, Aligning, Scripting and Scrolling. These processes mediate interconnectedness through supporting the perception of humans and technological inventions as different compositions of nature and therefore indivisible from the environment.

OS/error functions to rupture norms and dismantle oppressive fixities. It is an intentional and critical mode of operating, resisting a culture of binary code, measurement and calculation and maintaining the functions of indeterminacy, inefficiency and delay. *OS/error* is a means to reflect on what is unknown and feared, and ultimately advance queerness as a shared phenomena within the human, the computer, and the environment.

Link to project: www.oserror.run

Keywords technofeminism, critical posthumanism, boundaries, queer abstraction, glitch, failure, speculative design, video



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Typefaces

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Climate Base & Climate Melt by Gailè Pranckūnaitė
Stanley Smith by David Bennewith/Colophon
Syne Mono by Lucas Descroix/Bonjour Monde
Times New Bastard by Wei Huang
Saturn Boing by Tomato (created from the 1994 role-playing
video game Mother 2/EarthBound by Shigesato Itoi)

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References

Any sources and references listed with hyperlinks direct to open access versions and to DOI (digital object identifier) locations without paywalls or restricted logins. All online sources referenced in this text were accessed between 2019–2020.

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1 Introduction

- 1.1 Point of origin
- 1.2 Motivation and intentions
- 1.3 Research questions and structure
- 1.4 The human, the computer and the environment

Kate Birdstall & Julie Drew “We’ve come not to the death of the author – the author is alive and well, and she rewrites herself continuously.”¹

¹
Kate Birdstall and Julie Drew, “Wanting Ourselves: Writing (And) The Postsexual Subject” in *Writing Posthumanism, Posthuman Writing*, ed. Sidney I. Dobrin (SC: Parlor Press, 2015)

Sarah Wilson “...death of the author is not possible for those whose lived experience does not permit them to give up their subjectivity.”²

²
Sarah Wilson, “Situated Authorship: Feminist Critical Engagement with Roland Barthes’s “The Death of the Author” *Verso: An Undergraduate Journal of Literary Criticism* (2012) <https://ojs.library.dal.ca/verso/article/viewFile/513/511>

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To mark my point of origin, I will narrate the events and experiences which situate me here, now, presently, today. This is the personal history that I am continuously reconfiguring, experiences in my life that underscore my relationship with sexuality, technology and the environment. These memories are blurry, but nevertheless useful in recognizing my choices in this research production.

1989

The Berlin wall falls and two sides mix. My mother paints my room baby blue because she thinks I’m going to be a boy. My mother really wants a girl, but she doesn’t want to be disappointed. She convinces herself that I am a boy during gestation in her womb.

1989

Adobe Inc. introduces Photoshop 1.0, a graphics editing program for the Macintosh computer.

1990

I acquire a body to live. I am a first-born child. The doctor uses obstetrical forceps to forcefully pull me out of my mother’s body. Because of this I have slightly dented ear lobes.

1990

The web browser known as WorldWideWeb is introduced and includes both hypertext markup language (HTML) and the uniform resource locator (URL). Video is successfully distributed across the World Wide Web.

1991

Adobe Inc. introduces Adobe Premiere 1.0, a post-production video editing software.

1994

My family is middle-class, white descendants of early French, Irish, Scottish and English settlers in Canada (Turtle Island). My first school is situated on colonized land.

1995

I’m in front of a video camera. My mom fixes my dress and asks if I like the new camera. I answer that “I like all brand new things.”

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1997

My father is a refinery operator at Shell oil. His brother works at IBM computers. I inherit hoodies and hats with both logos.

1998

I believe that the computer will eventually “dematerialise” society and that this will decrease human destruction of the ecosystem.

1999

Our family purchases a desktop Macintosh computer. I print out line-drawn Disney images for coloring on. I’m at a Y2K lawn party with my parents. I ask if they are worried about the virus.

2000

I am alone in my room. I am praying in front of a Spice Girls poster. I’m praying for a T.V in my bedroom. I’m praying for a personal phone line. I’m praying my parents stop fighting.

2001

I am searching. Before ‘googling’ I am surfing. I sneak downstairs to the family computer late at night. My windows are open to Msn messenger, Sims and minesweeper.

2001

My school closes early and I am sent home to be with my family. In the T.V room, we watch the second collapsing World Trade Center tower in New York via live news.

2002

My aliases are Seksy_dancer69 and got2b_blonde. I am naked for the first time in a chatroom with a faceless someone on the other side of my screen.

2003

My parents think I’m a ‘natural’ with the computer. Which means, after school there is hardly a limit to computer use because it was educational. Downloading torrent files informs my sense of computer-usability. Internet porn informs my sense of femininity and sexual orientation.

2004

My eyes are fixated on glowing pixels that show me

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flickering signifiers in binary code. I am playing virtual games and applying different skins in my semiotic communication playground.

2004

I upload and review 100 pictures of myself. I select and display one.

2005

My income from childcare work is well above the minimum labour wage. I work a second weekend job as a mascot for the local mall. I buy a pink Motorola razor cellphone and accessorize it.

2006

I am gifted a macbook computer as a high-school graduation present from my parents and grandparents. We go to the store together to buy it marking the end of shared family use and the beginning of my individual relationship with the laptop.

2006

A profile of me is not my whole face. I reconstruct myself again by way of technology. Everyone online is a fragmented version of themselves, an alias, a username, a profile, a data-ficated being.

2007

I’m alone in my room with the comfort of a glowing screen. I’m chatting and can tell that these two characters :) mean a lot.

2007

My macbook pro is second-generation and has a trackpad that is larger than the trackpad of the first generation, giving more room for scrolling and multi-touch gestures.

2007

Smart devices are everywhere. Growing, infinitely. I care about followers. The internet is pulsing with the trillion-dollar data mining industry. I’m rising in numbers.

2007

I turn away from the fashion design industry and orient towards the graphic design industry. I shift my loyalty from the industrial sewing machine to the Apple computer.

18

2016 Technology is an environmental matter of concern. The environment is a technological matter of concern. My dad gifts me the book *Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future*.

2017 My sibling's body confuses its own internal boundaries. An autoimmune condition.

2018 Dreams of off-grid living. Not escapist, nor fundamentalist, but indeed romantic. Radical communities using renewable electricity and living, computing and organizing themselves differently.

2019 The queer community grows online. I come out to my family. Some mixed reactions.

2019 I'm alone in my room rejecting cookies. Drawing boundaries, jumping off platforms and leaving ships. I won't let my emotional life be run by the media lords of the right.

2020 A virus moves through the body of the world. Computation encircles me like a layer. Dense, interconnected, overgrown. I am searching for ways to hack the living technological system.

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1.2 Motivation and intentions

Sara Ahmed writes “It matters how we arrive at the places we do.”³

³
Sara Ahmed, *Queer Phenomenology: Orientations, Objects, Others* (Duke University Press, 2006)

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At the time of making this thesis, alongside my masters study, I joined the Helsinki-based platform EFFORT (formerly known as Designer as Feminist)⁴ and started working on a group-initiated research project to better grasp coloniality, feminism and design. I also designed and coded a website to provide us an online identity and a means to publish and share work. By the time I began my thesis research, I had just finished co-organizing a workshop on the topic of technofeminism.⁵ The workshop was rooted in group reflection and discussion about experiences of identity (ability, sexuality, gender, class, culture and age.) It enabled us to listen to each other and better understand the structures of oppression and liberation within digital technology.

⁴
EFFORT/Design_Feminism_Helsinki www.efforthelsinki.fi

⁵
“WWW: Win, Win, Win, or Working With Weakness: technofeminism and networks of care,” was a workshop co-organized in 2019 with Lisa Rein, <https://www.salon.io/cybercare/info>

In these two examples, both feminism and visual communication design practice mix in a way that truly matters to me. Therefore a main motivation to make this thesis was to encounter theory that would help me to make better sense of my political and existential orientation to design. I asked myself: Why design something? Why become something? I began to investigate potential topics for this thesis within critical posthumanism,⁶ new materialism,⁷ queer and technofeminist theory. This direction was with the hope that I would be able to find motivation, and critical understanding about the systems of power that design and govern my everyday through computer and information technology. I wanted to stay with and for my curiosity (and hesitation) towards the computer machine. I wanted to keep critical theory at the forefront and I wanted to work with digital visual production and coding.

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an approach to critically re-write and engage with the ongoing decomposition of the human. For a longer summary, see Stefan Herbrechter, "Critical Posthumanism," in *Posthuman Glossary*, edited by Rosi Braidotti and Maria Hlavajova (London: Bloomsbury, 2018) <https://criticalposthumanism.net/critical-posthumanism/#ftn1>

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a domain that works to understand and challenge dualisms in modern and humanist traditions. New materialism embraces the vitality of all matter and re-positions the human among nonhuman actants. See For a summary, see Kameron Sanzo, "New Materialism(s)" *Genealogy of the Posthuman by Critical Posthumanism Network*, edited by Megan de Bruin-Molè, Marija Grech and Christopher John Müller, April 26, 2018, <https://criticalposthumanism.net/new-materialisms/>

Today, visual communication designers are at the mercy of the computer industry they helped to develop. Digital competence is a necessity to work as a graphic, web or visual communication designer. This brings about a dependency on the hardware and software systems of the computer. A relationship of dependence that has been a long one. Andersen et al. research the early relationship between the weaving loom and the operator/designer. They write that the technological machine is not only a tool capable of automation and semi-automation, but an aspect of embodiment to think with. They inscribe: "*What does it mean to make with, collaborate with, or become a machine?*"⁸

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Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, "Digital crafts-machine-ship: creative collaborations with machines," *Interactions* 27, 1 (December 2019): 30-35, <https://doi.org/10.1145/3373644>

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The theorist Sadie Plant writes that "[t]he computer emerges out of the history of weaving, the process so often said to be the quintessence of women's work. The loom is the vanguard site of software development."⁹ Therefore designers, operators and programmers have historically "made-with" machines as tools and partners for visual communication design. This relationship with the computer enables sharing knowledge and stories through the output of a fabric, mesh, net. The threads of the loom have become the pixels of my personal computer.

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Sadie Plant, "The Future Looms: Weaving Women and Cybernetics", *Cyberspace, Cyberbodies, Cyberpunk* 1, no.3-4 (1995), 45-64, https://monoskop.org/images/1/13/Plant_Sadie_1995_The_Future_Looms_Weaving_Women_and_Cybernetics.pdf

<script>...how can I..</script> <script>...design?</script><script>...by way of technofeminism and...</script><script>...soften...</script>

tara mcpHERSONS "...engage technology and its production not simply as an object of our scorn, critique, or fascination but as a productive and generative space that is always emergent and never fully determined."¹⁰

10

Tara Mcpherson, "Designing for Difference," *Differences: A Journal of Feminist Cultural Studies* 25 no.1 (2014), 177-188

Computers raise an array of mixed emotions in me, including love, hate, fear, fascination, frustration, impatience, attachment and longing. This is why I feel that the relationship between the human, the computer and the environment is important for me to investigate, along with understanding some of the conditions which brought the computer close to me. Producing visual communication design gives me the possibility to move people and this is where my intentions are most aspirational. Really deep down, at the heart and core, I desire for the practical outcome of this research to touch people in a way that softens their individualism and provokes a critical reflection of their own experiences with nature and technology.

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Beyond technophobia¹¹ and technophilia,¹² I am motivated to better understand my relation to computer technology as a particular relation to materiality, internally and externally, to minerals, particles and pixels that I am a part of, which are emergent, never fully determined. Donna Haraway writes that “[t]he machine is not an it to be animated, worshipped and dominated. The machine is us, our processes, an aspect of our embodiment.”¹³ Comprehending technology then as an extension of myself, and as both oppressor and liberator, still raises challenging questions about how and when I should cooperate with it – what to make of and with it. From the outset of making this thesis, I remained uncertain yet committed to making-with the machine as it is in that relationship that I am able to weave stories through design and discover what it could possibly mean to “make with, collaborate with, or become a machine.”¹⁴

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fear, dislike, or avoidance of technology

12

love of or enthusiasm for technology

13

Donna Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” *Simians, Cyborgs and Women: The Reinvention of Nature* (New York; Routledge, 1991), 149-181, <https://theanarchistlibrary.org/library/donna-haraway-a-cyborg-manifesto-1>

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Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, “Digital crafts-machine-ship: creative collaborations with machines,” *Interactions* 27, 1 (December 2019): 30-35, <https://doi.org/10.1145/3373644>

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In this chapter I outline the structure of the written component and expand my research questions. I keep these questions close with me throughout this text. You may recognize them (or parts of them) in the `<script>` tags embedded throughout.

Primary research question: *How can I communicate the softening boundaries of and between the human, the computer, and the environment, by way of technofeminism and visual communication design?*

In a very real sense, boundaries include our sensory and perceptual delineations. We materialize differently. We become tangible and visible, composed in form, conceived of as hardened and separated. I often experience that my identity is shaped by what I am, and what I am not. From this uncertain place, I consider how to represent other truths that ground a more mixed, connected and intra-relational being.¹⁵ This question had me confront onto-epistemology,¹⁶ question individual separation, and move closer to a world where matter and meaning is entangled, co-constitutive and forever in a process of mixing.

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Intra-action is a theory that aims to unsettle the metaphysics of individualism and refers to the mutual co-constitution of subject and object through recognizing that they are only relationally distinct and do not exist as separate individual elements. See Karen Barad, “On Touching –The Inhuman That Therefore I Am,” *Differences* 23 (2012): 206-223 ; Karen Barad, *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*, (Duke University, 2007) <https://llib.eu/book/884681/fabe9a?regionChanged=&redirect=7046506>

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Ontology refers to being and existence and epistemology refers to knowledge and knowing. Onto-epistemology understands the practices of knowing and being as entangled and inseparable. See Karen Barad, *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*, (Duke University, 2007) <https://llib.eu/book/884681/fabe9a?regionChanged=&redirect=7046506> and Aliyu, Aliyu A., Ibrahim Singhry, Haruna Adamu, Mu’awuya and Muhammad Abubakar, “Ontology, Epistemology and Axiology in Quantitative and Qualitative Research: Elucidation of the Research Philosophical Misconception,” *Mediterranean Publications & Research International on New Direction and Uncommon* 2 No.1., December 22, 2015, (Bauchi: University of Agric, 2015)

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My next question was originally asked by the authors of the article *Digital crafts-machine-ship: creative collaborations with machines* and became an important secondary question for making this thesis. They ask: “[W]hat does it mean to make with, collaborate with, or become a machine?”¹⁷

KRISTINA ANDERSEN / RON
WAKKARY / LAURA DEVENDORF
/ ALEX MCLEAN “...what does it
mean to make with, collaborate with, or
become a machine?”¹⁷

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Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, “Digital crafts-machine-ship: creative collaborations with machines,” *Interactions* 27, 1 (December 2019): 30–35, <https://doi.org/10.1145/3373644>

In chapter 2 *Theoretical Framework*, I outline a framework that uses sources and references in the domain of visual communication design and technofeminism. In chapter 2.1 *Visual Communication Design*, I assemble a chronicle of historical and contemporary works of art and visual communication design, in order to present a technofeminist communication of the softening boundaries of and between the human, the computer and the environment. In chapter 2.2 *Technofeminism*, I articulate how I see technofeminism as a significant discourse today and think with several writers who help me to better understand the concepts of glitch/error/failure and *QueerOS*.

In chapter 3 *Research Methods*, I frame both autotheory and mixing as methods rooted in feminist theory and science and describe their creative application in the practice of composing the video, poetry, and sound of *OS/error*.

In chapter 4 *Composing OS/error*, I decompose the practical outcome of this thesis through describing the theory and methods I applied to create the poetry and video. I also reflect on my collaboration with the project’s sound designer Aliisa Talja.

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In chapter 5 *Discussion*, I critically discuss and further reflect on *OS/error* as the practical outcome of my research.

Lastly in chapter 6 *Conclusions*, I conclude and outline some limitations and critical considerations, as well as indicate further questions and areas for extended research.

The *Appendix* includes a hyperlink to the online location of *OS/error* and as a written transcript of the poetry.

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1.4 The human, the computer, and the environment

In introducing the topic of this thesis, I want to remain transparent about my origins so you can understand me and grasp where this text is coming from when I write about macro-scale matters such as the human, the computer, and the environment. I am writing from the perspective of someone who has reached maturity during a consumptive surge of smart devices and digital connectivity in the West, or more appropriately, in one third of the world. Riding a wave of liberal government and inter-generational accumulation of wealth, the economy in my family was relatively stable, and I grew up in a culture of rapid globalisation and hyperindividualism. I have internalized specific visions of progress, and am part of a culture full of ideals of how the human should appear and behave. It is with this history that I tend to orient toward articulating the ways in which computer technology atomises rather than fuses the world together.¹⁸

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for depictions of the post-internet climate and broken digital sublime, see Sherry Turkle, *Alone together: why we expect more from technology and less from each other* (New York: Basic Books, 2011) and James Bridle, *New Dark Age: Technology and the End of the Future* (Verso: 2018)

Olia Lialina Computers are getting invisible. They shrink and hide. They lurk under the skin and dissolve in the cloud. We observe the process like an eclipse of the sun, partly scared, partly overwhelmed” ...“We divide into camps and fight about advantages and dangers of The Ubiquitous. But whatever side we take — *we do acknowledge the significance of the moment.*”¹⁹

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Olia Lialina, *Turning Complete User* (2012) <http://contemporary-home-computing.org/turing-complete-user/>

Everyday a multiplicity of technovisions establish and encode how technology will change our lives and futures. Under the banner of progress, corporations and governments use mass-surveillance to turn vastly more of the world into information, through a logic of simplification, codification and differentiation. The neutral and progressive status of computer technology is called into question as we come to better know the digital and social frameworks that preserve patriarchal and military language, tactics of centralization and colonial practices, rare-earth mineral extraction and exploitative labour.

Today approximately seventy percent of the world’s population use mobile phones and well over one third of the world has access to the internet and/or is estimated to own a personal computer.²⁰ Despite national conversations about gender diversity in tech, 88% of all information technology patents (from 1980–2010) had male-only invention teams. Meanwhile by 2015, only 16% of White women, 5% of Asian women, 3% of Black/African American women and 1% of Latina/Hispanic women held occupations in the computer IT industry at all (middle eastern and indigenous women were regrettably absent from these statistics.)²¹ This is the only time in this thesis where I will refer to humans specifically as data. The categorization and labeling

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of race and gender itself can provide knowledge, but also fails to grasp the nuances and complexity of individual identity. Diversity in the computer industry is not the sole focus of this thesis, and yet I want to raise these facts now so that you can fathom the inequality of the world of which I speak.

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ITU Statistics, “New ITU statistics show more than half the world is now using the Internet,” ITU news, Dec 6 2018, retrieved August 22, 2020 from <https://news.itu.int/itu-statistics-leaving-no-one-offline/>, and Emma Luxton “4 billion people still don’t have internet access. Here’s how to connect them,” World Economic Forum, retrieved August 22, 2020 from <https://www.weforum.org/agenda/2016/05/4-billion-people-still-don-t-have-internet-access-here-s-how-to-connect-them/>, Luke Pensworth, “2019 Internet Statistics, Trends & Data,” retrieved August 22, 2020 from <https://dailywireless.org/internet/usage-statistics/>

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Catherine Ashcraft, Brad McLain, and Elizabeth Eger, “Women in Tech: The Facts,” *The National Center for Women & Information Technology (NCWIT) Bureau of Labour* (2016) retrieved August 22, 2020 from https://www.ncwit.org/sites/default/files/resources/ncwit_women-in-it_2016-full-report_final-web06012016.pdf

The inequalities of the technological world are wide-spanning and historical, and disproportionately disable those who are recognized as less than human. In *Restor(y)ing the Ground: Digital Environmental Media Studies*, Amanda Starling Gould traces the curious absence of environmental thinking from digital theory. In this detachment, “*the digital sphere now has a carbon footprint that rivals, and may soon overtake, the aviation industry...*”²² Gould argues that no matter how we tend to think about technology, it is vital that we recognize computers as performing de-materializing abstractions that sustain the neglect of environmental thinking.²³ “[O]ur wirelessness requires heavily wired infrastructure; and even our Google searches and spam emails have a carbon footprint.”²⁴ The computer may have transformed the material world, but not without considerable carbon impact. Furthermore, the effects of climate change and global warming are then unequally distributed across beings and the environment. The future hinges on our collective technovisions. The consequences of “digital” being rendered as *immaterial* are becoming more perceptible.

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Amanda Starling Gould, “Restor(y)ing the Ground: Digital Environmental Media Studies,” *Networking Knowledge: Journal of the MeCCSA Postgraduate Network* 9, no. 5 (2016) <https://doi.org/10.31165/nk.2016.95.455>

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Ibid.

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amanta starling goults “Long before our bodies turn into pure computation, they’ll be biologically and biophysically altered by the bioaccumulation of technology-related toxins and environmental habitat destruction. This more imminent evolution is what we should be streaming.”²⁵

Visions for a “progressive” future can be easily distorted, especially when stories of pollution, health, labor and environment are not heard loudly enough in relation to the benefits of increased digital media and rapid acceleration of computer technology.²⁶ Computers have become increasingly personal and intimate, neutralized, and therefore easily detached from the humans and culture where they envisioned and materialized, not to mention the material and mineral environment (what we now call resources) that they emerged from. In an odd turn, I see computer technology becoming rendered as “next nature.” I wonder how the imperative for a more “wired world,” necessarily equates with the imperative for a more globally sustainable one, especially now when the benefits of such innovations are in so many ways distributed unequally.

may-britt ohman “Kuoljok is yoiking a landscape, and he yoiks his vision, of reindeer happiness, a prosperous future – a *TechnoVision*.

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TechnoVisions are our individual human visions – our understandings of the past and present and our dreams of futures, which we communicate in different media to our fellow humans.”²⁷

²⁷ May-Britt Öhman, “TechnoVisions of a Sámi cyborg: Re-claiming Sámi body-, land- and waterscapes after a century of colonial exploitations in Sápmi” in *Illdisciplined Gender: Engaging Questions of Nature/Culture and Transgressive Encounters*, ed. Jacob Bull and Margaretha Fahlgren (Rotterdam: Springer, 2016)

Artist Tabita Rezaire speaks of the dual nature of current computer technology, which is that of both “*erasing non-Western histories and people, while at the same time providing space and tools for their remembrance and celebration.*”²⁸ Such a paradox puts me in a place (in between) where I am both for and against. I learned recently that to be against something is also to be very close to it.²⁹ The word “against” has two meanings, which is why in this thesis when I speak about critical posthumanities, I am speaking about the resistance movement. Those who are struggling against what is pressing close. Thinking in this field draws me to those who write and make from a place of oppression, yearning to disrupt the dominant narratives and norms of their time. I look to those who think against the norms and limitations of what counts as the human, the computer and the environment and to those who work to dismantle anthropocentrism as it encompasses colonialism, racism, sexism, classism and other major oppressions.

²⁸ Tabita Rezaire, *Fighting For Love: An Interview Of New Media Artist, Young Polemicist And Kemetic Yogi*, Tabita Rezaire, interview by Keely Shinnars, Autre, March 20, 2017, <https://autre.love/interviews/main/2017/3/20/fighting-for-love-an-interview-of-new-media-artist-young-polemicist-and-kemetic-yogi-tabita-rezaire>

²⁹ Lama Rod Owens, “#253: An Uncomfortable (But Meaningful) Conversation About Race,” Interview with Dan Harris, *Ten Percent Happier Podcast*, June 3, 2020, <https://podbay.fm/p/ten-percent-happier-with-dan-harris/e/1591167631>

<script>...the human, the...</script><script>...the computer and...</script><script>...boundaries of...</script>

Within the relationship of the human, the computer and the environment, it is important to understand that the birthing grounds for computer technology was and is not neutral but is rather endowed with a patriarchal, racial and colonial value basis. Frankly this means that hardware and operating systems that I use are not without these logics and ideologies even though I stand against (close to) these logics and ideologies.³⁰ The contradictions are present, and the knowledge and history of racism, coloniality and patriarchy are operating within the computer, as much as operating within me and in/forming me. Amidst the complexity and uncertainty, for myself it is heartening to find a community of critical posthuman and technofeminist thinkers, who focus much attention on social and technological forms of power through tending to important questions of ethics, difference and justice.

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Tara McPherson, "U.S. Operating Systems at Mid-Century: The Intertwining of Race and UNIX," In *Race after the Internet*, ed. Lisa Nakamura and Peter A. Chow-White (New York: Routledge, 2012) [http://pdf.zlibcdn.com/dtoken/8d4d4347b57d041de93c3626e6260fb3/Race_after_the_Internet_by_Lisa_Nakamura_Peter_Ch_1257492_\(z-lib.org\).pdf](http://pdf.zlibcdn.com/dtoken/8d4d4347b57d041de93c3626e6260fb3/Race_after_the_Internet_by_Lisa_Nakamura_Peter_Ch_1257492_(z-lib.org).pdf)

SHERRY TURKLE & SEYMOUR
PAPERT: "If the computer is a tool,
and of course it is, is it more like a ham-
mer or more like a harpsichord?"³¹

31

Sherry Turkle and Seymour Papert, "Epistemological Pluralism and the Revaluation of the Concrete," in *SIGNS: Journal of Women in Culture and Society* 16, no.1 (Autumn 1990)

<script>...by way of technofeminism and visual communication design.</script><script>...how can I...</script><script>...boundaries of and between...</script>

In this thesis I ask: *How can I communicate the softening boundaries of and between the human, the computer, and the environment, by way of technofeminism and visual communication design?* This question required making roots into technofeminism and visual communication design which led me to use both autotheory and mixing as methods rooted in feminist theory and practice. These methods are applied to video, poetry and sound for the purpose of composing *OS/error* as the

practical outcome of this research.

OS/error is both conceptual and audio-visual – a speculative³² software that does not need to work in any standard sense in order to “work.” The project is composed as a six-mode operating system that poetically performs: *Searching, Functioning, Building, Aligning, Scripting and Scrolling*. These processes mediate interconnectedness through supporting the perception of humans and technological inventions as variations of multiform nature that are indivisible from the environment. The result is a collaborative production which questions and softens the visual, auditory, and linguistic boundaries of separation between the human, the computer and the environment.

There is something absurd about an operating system intended for failure. Therefore, *OS/error* is assembled like an erroneous organism, a glitched body-machine that is queer in the sense of its functioning to rupture norms and dismantle oppressive fixities. It is an intentional and critical mode of operating, resisting a culture of binary code, measurement and calculation and maintaining the functions of indeterminacy, inefficiency and delay. In rendering and drawing attention to errors, glitches and failures, *OS/error* functions as a means to reflect on what is unknown and vilified, and therefore advance queerness as a shared phenomena between the human, the computer, and the environment.

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Speculation is a process of wondering, contemplation or consideration that is said to be theoretical or fictional rather than demonstrable.. See Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (MIT Press, 2014)

<script>...collaborate with...</script><script>...of and between the...</script><script>...the human, the...</script><script>...computer...</script>

@least {try.to.shift}

Rebellion Of The Script



2 Theoretical Framework

- 2.1 Visual communication design
- 2.2 Technofeminism
 - 2.2.1 QueerOS
 - 2.2.2 Glitch/Error/Fail



FIGURE 1: HANNA HOCH, DAS SCHÖNE MÄDCHEN (THE BEAUTIFUL GIRL), 1920

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My theoretical research begins where I am professionally rooted, listening and seeing in an evolving field of visual arts and communication design. Through searching the internet, I have come across several people who have interrogated the boundaries of and between the human, the environment and technological machines through art and visual communication design. This chapter therefore works through a partial chronicle of both historical and contemporary work, which I see as softening hardened boundaries, as well as developing an aesthetic of glitch, failure and error. What is similar about the approaches I focus on, is that they neither dismiss technology (as solely oppressive) nor hold it to any purely liberatory status. This is the mode of critical and affirmative thinking that I have come to understand as technofeminism. My aim in this chapter is to also to connect these artists/designers and their works with relevant shifts and changes within the feminist movement and field of visual communication design.

I begin this chronicle around the time of the Women's rights movement of the 1920s. From within this political climate, Hannah Höch (often associated with the Berlin Dada group) challenged normative gender roles through personal appearance and through making artistic work. Höch operated during a time when women's voices (especially in the field of critical art and design) were rarely heard. Höch's compositions softened the boundaries between the biological and the technological, and in doing so worked to disrupt binaries and the notion of binary purity within natural/unnatural and human/machine. Here I will reference Höch's photo-montage work *Das schöne Mädchen* (*The Beautiful Girl*)³³ which depicts collage, layers of meaning, glitched cuts and hybrid life forms in processes of decomposition.

33
see figure 1

Decades later, in 1987, April Greiman was able to work undaunted by the definitions which confined the role and scope of a graphic designer. For Greiman, the personal computer was a tool that should be properly misused in order to produce art and design. Greiman's relationship with the computer meant understanding the

machine as producing “floating signifiers in time and space,”³⁴ as a result of connection with the earth: “[W]e’re manipulating light. Now we’ve got a global dialogue working on a network of light – the internet...”³⁵ Through embracing the early personal computer artistically, Greiman developed visual aesthetics that speak to the interconnectedness of the human, the computer, and the environment.³⁶ In the work *Does it Make Sense?*,³⁷ Greiman layers meaningful signifiers in order to disrupt the human and its perceived separation from the rest of the world. The poster visualizes the relationship between the female body, the computer and the environment through an expansion of interconnectedness that highlights the material nature of digital technology.

³⁴
April Greiman and Liz Farely, *Floating Ideas into Time and Space*,
(Watson-Guption, 1998)

³⁵
Ibid.

³⁶
Watch a video of April Greiman describing the process of making
Does it Make Sense: <https://www.youtube.com/watch?v=DoDItJ4zI98>

³⁷
see figure 2 and figure 3

From the 1970s to the early 1990s, Katherine McCoy was head of Cranbrook Academy of Art in Michigan, where students were encouraged to engage more subjectively with their own work. While exploring poststructuralist³⁸ theories of instability of meaning, McCoy unsettled the myth of a concrete, logical and standardized design that had become cemented in European and North American design discourse.³⁹ McCoy shifted the gaze back to the individual designer, and reinstated a sense of voice and political agency in which to engage life and society through design.⁴⁰ The approach emphasized emotion, self-expression, and multiplicity of meaning through better understanding one’s own position as a designer situated in the world.⁴¹

³⁸
Poststructuralism originated in France in the mid-1960s and into the 1970s. The theory responded to the need for critiquing discourse, power and truth.

In the summer of 1992, the cyberfeminist collective VNS Matrix designed and put up the billboard *The Cyberfeminist*

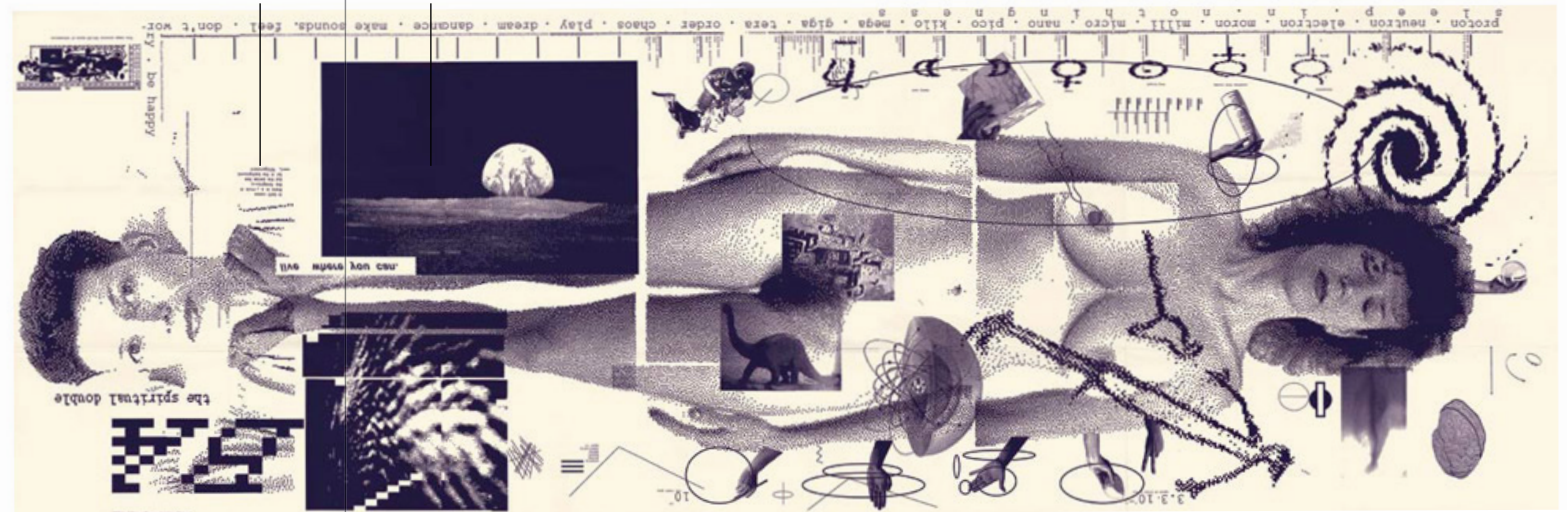


FIGURE 2: DESIGN QUARTERLY, NO. 133, “DOES IT MAKE SENSE?”, FRONT, APRIL GREIMAN, 1987

³⁹
Bryon Sin, *Graphic Design Theory: Readings From the Field*, edited
by Helen Armstrong (New York:Princeton Architectural Press, 2009)
https://issuu.com/byronsin9/docs/graphicdesigntheory_helenarmstrong?cv=1

⁴⁰
Katherine McCoy, “Shedding paradigms,” *Eye 3*, no.10 (Autumn 1993)
<http://www.eyemagazine.com/opinion/article/shedding-paradigms>

⁴¹
If this doesn't already sound feminist enough, see Laurie Hay-
cock Makela and Ellen Lupton, “Underground Matriarchy in Graphic
Design,” in *Eye 4*, no.14 (Autumn 1994) <http://elupton.com/2009/09/underground-matriarchy/>



FIGURE 3: DESIGN QUARTERLY, NO. 133, “DOES IT MAKE SENSE?”, BACK, APRIL GREIMAN, 1987

*Manifesto for the 21st Century*⁴² on the side of a gallery in Sydney, Australia. Their graphic composition is mythical, symbolic, endowed with layers of possible meaning. Like Greiman and Höch, VNS Matrix's aesthetics point to the decomposition of gender and the entanglement of meaning and material. Their billboard, now a beacon in certain feminist communities, depicts a multi-layered collage of queer hybrid creatures on a background of atoms and pixels. Their distorted letterforms transmits phrases such as “*MERCENARIES OF SLIME*”⁴³ and “*WE ARE THE VIRUS OF THE NEW WORLD DISORDER.*”⁴⁴

⁴²
see figure 4, VNS Matrix, *The Cyberfeminist Manifesto for the 21st Century* (1991) <https://vnsmatrix.net/projects/the-cyberfeminist-manifesto-for-the-21st-century>

⁴³
Ibid.

⁴⁴
Ibid.

<script>How can I communicate...</script><script>...and visual...</script>

Examining visual composition for graphic designers raises the question of modernism.⁴⁵ In 1993 Steven Heller wrote the essay *Cult of the Ugly*, arguing that modernist design advocates legibility and mathematical structure (the “logical” arrangement between parts and elements) as a key component of graphic design, while postmodernists question this, sacrificing legibility when necessary to achieve visual, conceptual, and even critical impact.⁴⁶ At that time, works of visual communication design that resembled “*layered images, vernacular hybrids, low-resolution reproductions and cacophonous blends of different types and letters*”⁴⁷ began to perforate through the veil of Western and European modernism. Heller argued that these types of design compositions connected with the surge of post-structuralist theory at the time and aimed to “*challenge prevailing aesthetic beliefs and propose alternative paradigms.*”⁴⁸

Today, feminist philosopher Rosi Braidotti responds to the recent surge of critical and posthuman theory and notes its alliance with artistic practice. In the preface of the 2019 book *Posthuman Glossary*, Braidotti writes: “*theory is back!*”⁴⁹ As the field of visual communication design softens its boundaries with the realms of art and computer programming, three contemporary artworks come to mind which draw attention to the human, the computer, and the environment through visualizing their entanglement.⁵⁰

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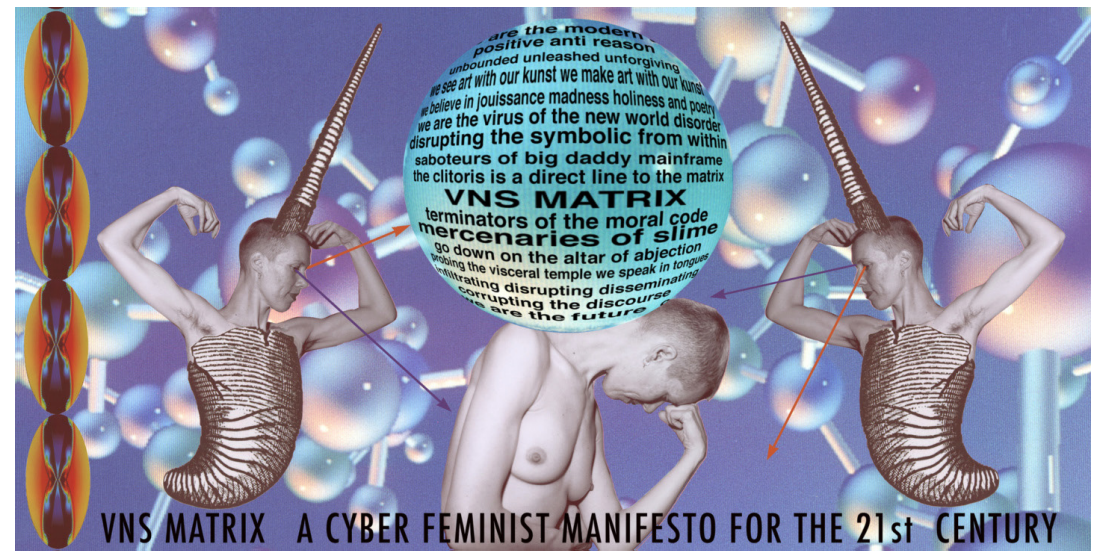


FIGURE 4: THE CYBERFEMINIST MANIFESTO FOR THE 21ST CENTURY, 1991, BILLBOARD POSTER, VNS MATRIX

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⁴⁵
a philosophical movement of the late 19th and early 20th centuries that was based on a utopian vision of human life and an underlying belief in the progress of society. Modernism assumes that certain universal principles or truths such as those defined by science or religion could be used to understand or explain reality.

⁴⁶
Byron Sin, *Graphic Design Theory: Readings From the Field*, edited by Helen Armstrong (New York:Princeton Architectural Press, 2009) https://issuu.com/byronsin9/docs/graphicdesigntheory_helenarmstrong?cv=1

⁴⁷
Steven Heller, “Cult of the Ugly,” *Eye* 3, no.9 (Summer 1993) <http://www.eyemagazine.com/feature/article/cult-of-the-ugly>

⁴⁸
Ibid.

⁴⁹
Rosi Braidotti and Maria Hlavajova eds., *Posthuman Glossary* (Bloomsbury, 2018)

⁵⁰
with entanglement, I am referring broadly feminist new materialism(s) as they intertwine ontology (the nature of being) with knowledge, ethics and politics. Entanglement is a major thinking concept which enables us to understand the relationship between matter, in an urgent effort to move beyond biological determinism and unchecked cultural determination. See Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007) <https://lib.eu/book/884681/fabe9a?regionChanged=&redirect=7046506>

<script>... a machine?</script><script>... the human, the computer, and the environment...</script>

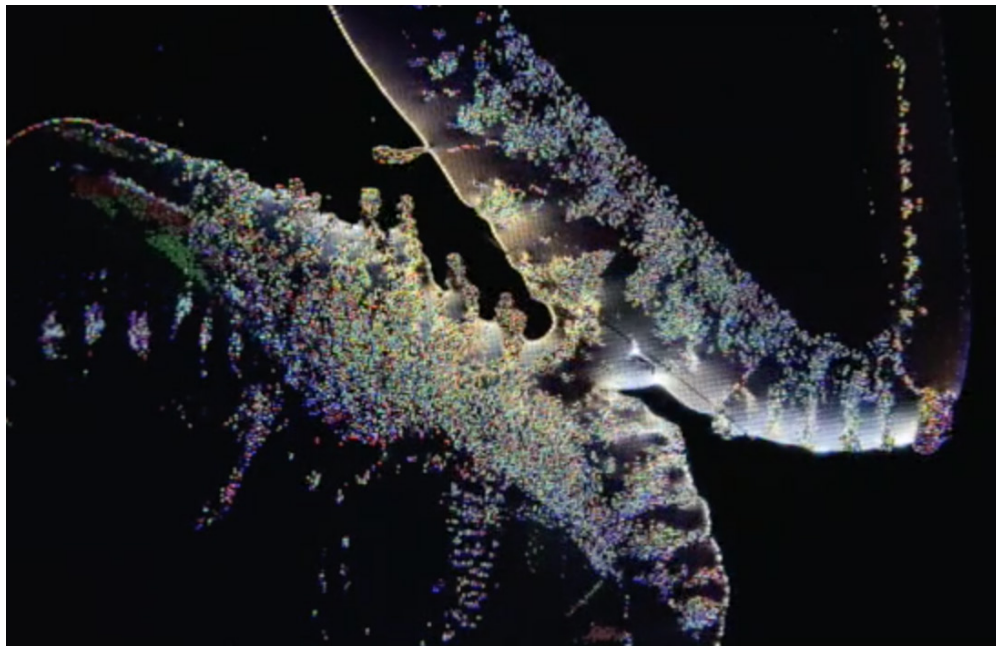


FIGURE 5: SCREENSHOT FROM MANIFESTO OF THE LIBERATED PIXEL, ANETTA MONA CHIȘA AND LUCIA TKÁČOVÁ, 2017, [HTTPS://VIMEO.COM/225316306](https://vimeo.com/225316306)

In the film *Manifesto of the Liberated Pixel*⁵¹ Anetta Mona Chișa and Lucia Tkáčová illustrate an abstract world that puts forward the very material aspect of virtuality. Their glitched visuals are indeterminate and always in motion, revealing a sense of agency and activity within pixel-matter.

⁵¹

see figures 5, 6 and 7

In their film, the manifesto is read by a text-to-speech computer reader:

I AM THE VIRTUALITY OF MATERIALITY TURNED INTO
MATERIALITY OF VIRTUALITY AND BACK.

and

I ALLOW MYSELF THE FREEDOM TO FLOAT FREE AND TO
MAKE MISTAKES.

I GIVE MYSELF THE FREEDOM TO BE LESS THAN PERFECT.

I VACATE MY STATE IN FAVOR OF DATA-FREE-SELF,

RANDOMNESS AND ANTI-REPRESENTATION⁵²

⁵²

Audio transcript from *Manifesto of the Liberated Pixel*, Anetta Mona Chișa and Lucia Tkáčová, 2017, <https://vimeo.com/225316306>

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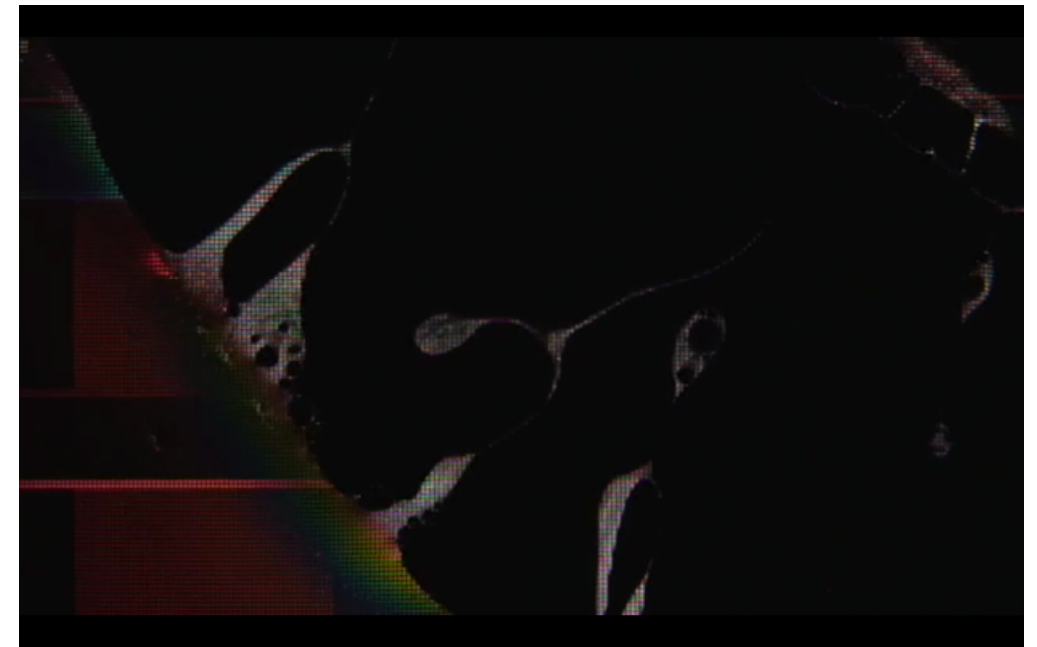


FIGURE 6: SCREENSHOT FROM MANIFESTO OF THE LIBERATED PIXEL, ANETTA MONA CHIȘA AND LUCIA TKÁČOVÁ, 2017, [HTTPS://VIMEO.COM/225316306](https://vimeo.com/225316306)

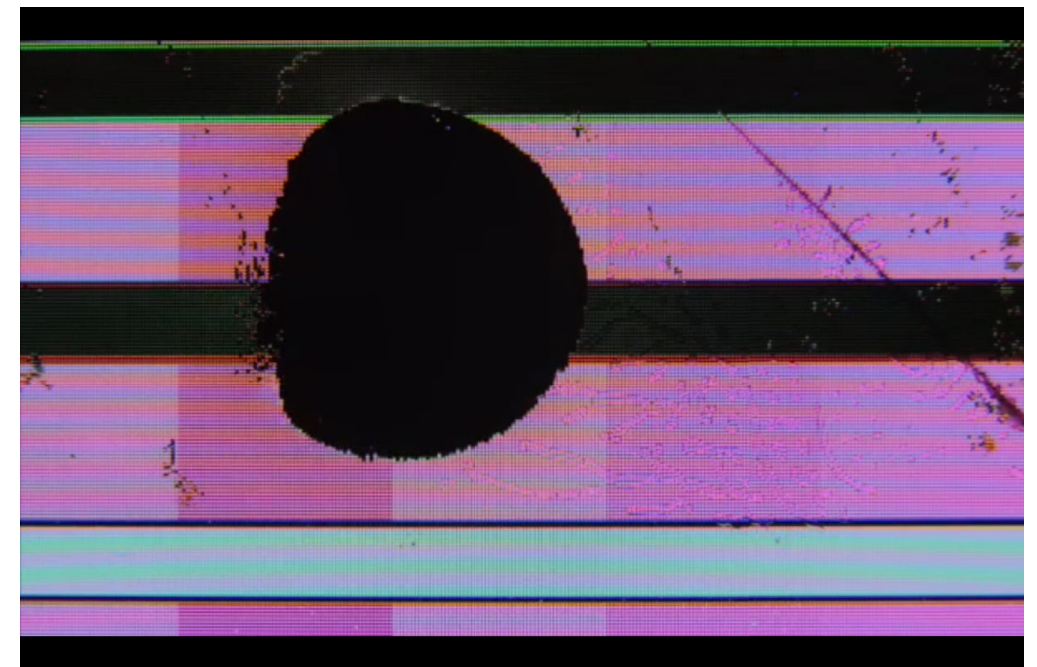
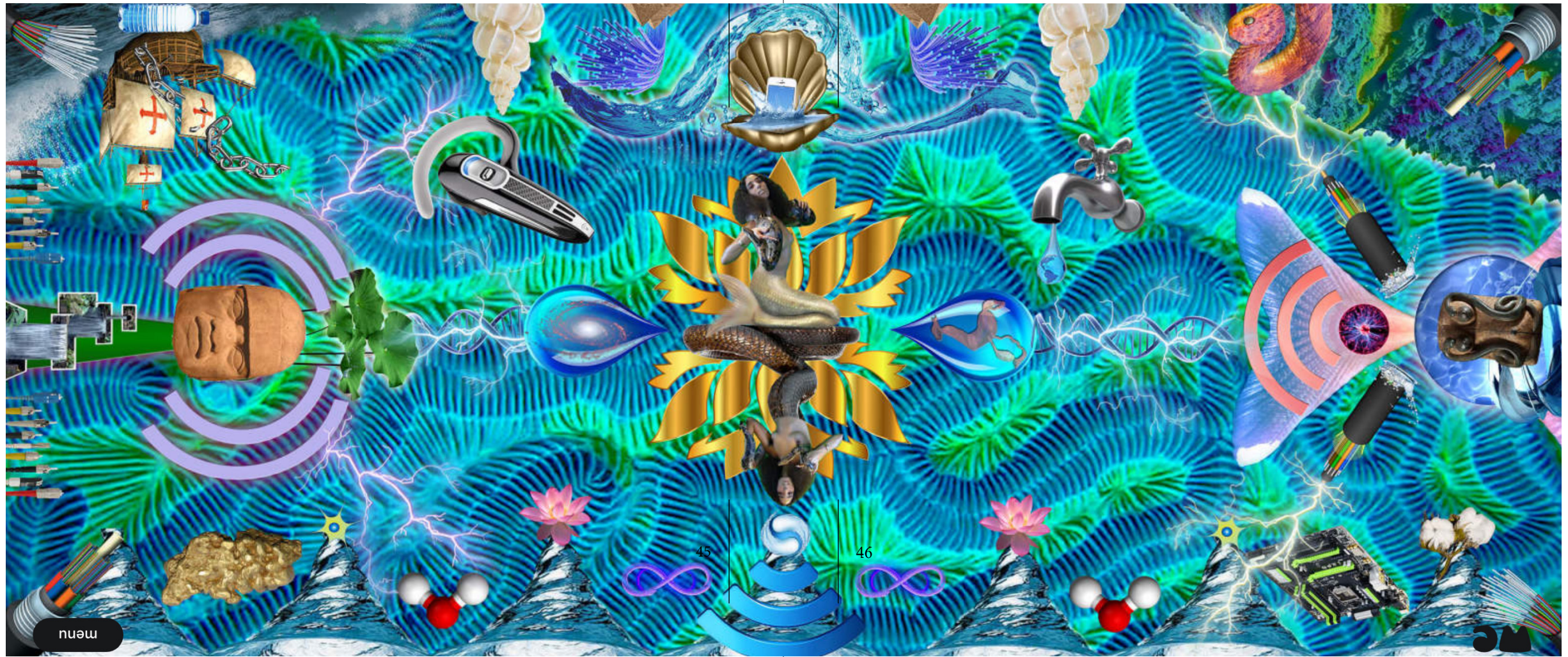


FIGURE 7: SCREENSHOT FROM MANIFESTO OF THE LIBERATED PIXEL, ANETTA MONA CHIȘA AND LUCIA TKÁČOVÁ, 2017, [HTTPS://VIMEO.COM/225316306](https://vimeo.com/225316306)

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In another example, Tabita Rezaire's films use a performative and didactic way to communicate the mechanics of power embedded within computer technology and its subsequent impacts on race, sexuality, and the environment. In *Deep Down Tidal*,⁵³ Rezaire highlights the colonial shipping routes and slave trade of African people, and depicts it alongside the map of our current internet cable infrastructure. In doing so, Rezaire maps the parallel pathways of power and shows the entangled relationship between the human, the computer and the environment. Rezaire's films also strategically highlights the technological medium itself through using low-tech post production and rough-cut merges of the body, the environment, and the technological interface.

Lastly, in *< all_nerves_on_the_universe.html >*⁵⁴ and *Protasis: on becoming a body* タイトル: 導入; 身体として生成すること,⁵⁵ Joana Chicau creates inter-layered videos across space in order to depict coding and choreography as organizing ways of movement. The videos depict movement through complex landscapes of information interfaces, multi-media environments and networked spaces.⁵⁶ The spatial, temporal and performative aspects of her coding makes visible the design process of composition itself in order to amplify the softening boundaries between humans and computer machines. Chicau's films consider movement as a main activity, and reveal that both code and the body is not a finished matter, but unbound and emergent.

I understand this chronicle of works as representing the human-environment-machine relationship through a feminist posthuman re-visioning of our relations with/in the world. In all of the mentioned works, the decomposition of separate, sensical forms allude to an enmeshed hybrid world but always with the presence of personal subjectivity, a voice with critical and explicit intention. The artists and designers which I have mentioned retain their own personal modes of critique, but together form a broader link to visually communicating by way of technofeminism.⁵⁷ The link between visual communication design and technofeminism reveals a particular use of poetics, sound and video (often with significant amounts of post-production design.)⁵⁸ Absorbing these works have helped me to make sense of the visual and conceptual methods I needed to apply to *OS/error*. The logical continuation of this research was to better understand technofeminism as a discourse today, in order to find my place within it and know which lenses to look through.

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see figures 9

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see figures 10

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for insight into Joana Chicau's process see <https://esoteric.codes/blog/body-building-the-code-performance-of-joana-chicau>

57

for more work in this domain, I recommend the 2020 online exhibition *Digital Power: Activism, Advocacy and the Influence of Women Online*, organized by the ACM SIGGRAPH Digital Arts Community <https://digital-power.siggraph.org>

58

check out video work from artists Lynn Hershman Leeson, Suzanne Treister and Laurie Anderson

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FIGURE 9: SCREENSHOT FROM *< ALL_NERVES_ON_THE_UNIVERSE.HTML >*, JOANA CHICAU, 2017 [HTTPS://VIMEO.COM/236096473](https://vimeo.com/236096473)

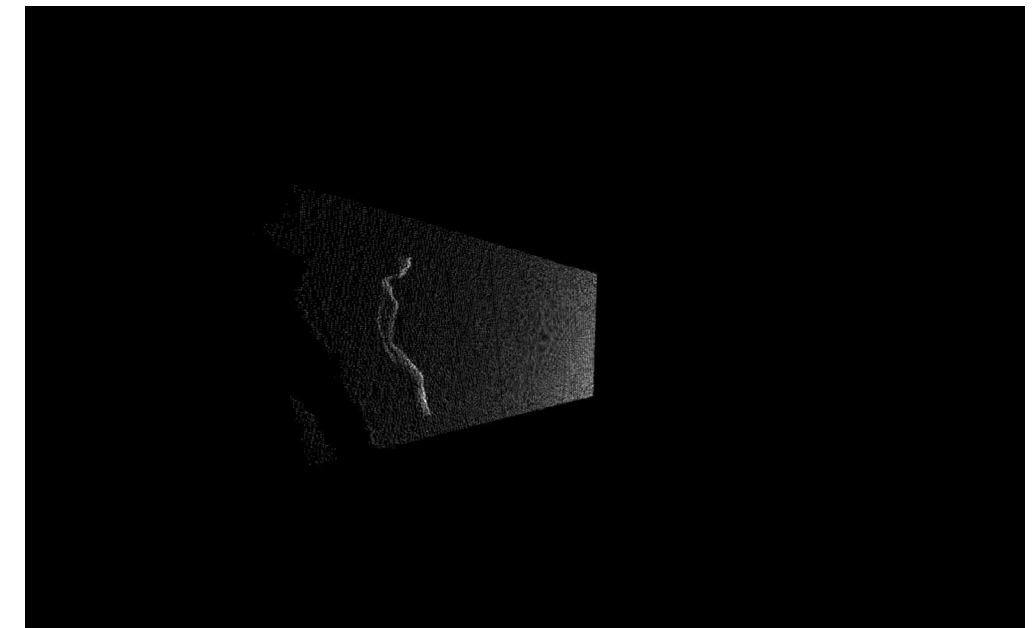
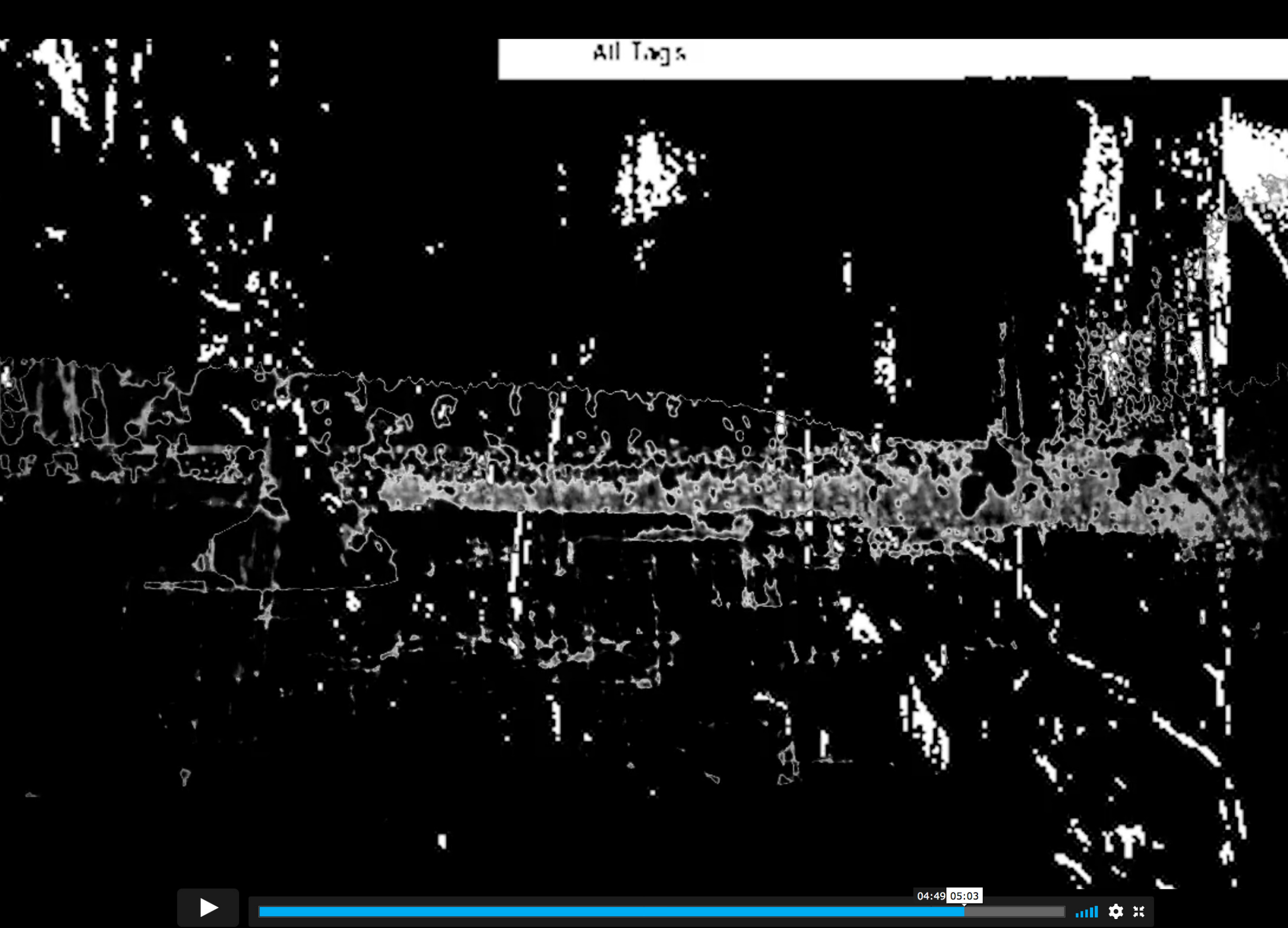


FIGURE 10: SCREENSHOT FROM *PROTASIS: ON BECOMING A BODY* タイトル: 導入; 身体として生成すること, JOANA CHICAU, 2017, [HTTPS://VIMEO.COM/233644681](https://vimeo.com/233644681)

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All Tags



04:49 05:03



Technofeminism connects feminism with technology and technology with feminism. This praxis has also been referred to as cyberfeminist (named in the 90's), and I will refer to both interchangeably. Technofeminist practice and theory can not be rendered as one single thing.⁵⁹ Cornelia Sollfrank writes that cyberfeminism is a label that “creates a myth of a political identity without forcing anyone to strive for it”⁶⁰ and therefore refuses one history as well as one truth.⁶¹ It is a “term applied to a variety of expressions, views, practices and understandings, containing contradictions, tensions and diverse manifestations.”⁶²

Today I see technofeminism as a growing movement, amongst a surge of postdigital creative work,⁶³ and embedded within critical discourse and activism. More than just a label, it is also a feminist community to situate myself within, and a reminder of what I am striving for and against. Technofeminism today feels wild and full and a home for multiple theories, manifestos and retellings of history. The technofeminist movement in the 21st century has evolved, and now holds multiple organizations and initiatives centered around queer, feminist and decolonial politics and discourse.⁶⁴

59

Cornelia Sollfrank, *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century*, edited by Cornelia Sollfrank (Autonomedia, 2019) https://monoskop.org/images/d/de/Sollfrank_Cornelia_The_Beautiful_Warriors_Technofeminist_Praxis_in_the_21st_Century_2019.pdf

60

Ibid.

61

Cornelia Sollfrank, “The Truth About Cyberfeminism,” in *The Spectralization of Technology: From Elsewhere to Cyberfeminism and Back*, edited by Marina Gržinić and Adele Eisenstein (Slovenia: The Youth Culture Center, 1999) <http://archive.constantvzw.org/events/el2/fr/corsolfr.html>

62

Mary Flanagan, and Austin Booth, *Reload: Rethinking Women + Cyberculture* (Cambridge: MIT Press, 2002) ; Cornelia Sollfrank, *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century*, edited by Cornelia Sollfrank (Autonomedia, 2019) https://monoskop.org/images/d/de/Sollfrank_Cornelia_The_Beautiful_Warriors_Technofeminist_Praxis_in_the_21st_Century_2019.pdf

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with post-digital, I am referring to the past and present waves of critical and reflective work about digital technology and media.

64

Cornelia Sollfrank, *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century*, edited by Cornelia Sollfrank (Autonomedia, 2019) https://monoskop.org/images/d/de/Sollfrank_Cornelia_The_Beautiful_Warriors_Technofeminist_Praxis_in_the_21st_Century_2019.pdf

<script>How can I...</script><script>...communicate...</script><script>...make with...</script> <script>...boundaries of and between...</script>

In *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century*, Cornelia Sollfrank understands our contemporary situation as “the accumulation and advance of technology”⁶⁵ which Sollfrank argues is “continually expressed in terms of freeing us from nature.”⁶⁶ Technofeminism is an effort to raise critical awareness about the impact new technologies brings to our lives, and aim to reveal and repair the gender, racial, and epistemological biases of technoculture. Within our contemporary condition, Sollfrank stresses the importance of recognizing and responding to changes which include “new forms of subject-constitution, new distributions of competence regarding new technologies, new infiltrations of power configurations, and new forms of discourse which are established.”⁶⁷ The field of digital innovation is on a fast-track of technocapitalist acceleration.⁶⁸ The purpose of technofeminism is to not become fixed, but remain adaptive and responsive.⁶⁹

65

Ibid.

66

Ibid.

67

Cornelia Sollfrank, *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century*, edited by Cornelia Sollfrank (Autonomedia, 2019) https://monoskop.org/images/d/de/Sollfrank_Cornelia_The_Beautiful_Warriors_Technofeminist_Praxis_in_the_21st_Century_2019.pdf

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changes in capitalism associated with the emergence of new technology sectors, the power of corporations, and new forms of organization

Critical discourse has historically neglected the knowledge of the marginalized. Contemporary technofeminism today must incorporate the structural nature of inequality. Kishonna Leah Gray-Denson believes black cyberfeminism can provide "*a self-consciously critical stance toward the existing order with respect to the various ways that the digital affects women*"[...] "*recognizing that we all come from distinct realities converging in virtual spaces.*"⁷⁰ Internet technology and social media can be empowering to the effect of allowing the voices of black women and other marginalized groups to be heard. Police violence can be documented, contemporary social movements and widespread protests such as #BLM⁷¹ and #metoo⁷² have been collectively orchestrated through the digital network. Leah Gray-Denson theorizes that black women's "*use of social media reflects their incorporation of digital technologies and their continued efforts on the ground.*"⁷³ In these ways, internet technologies have been functional in connecting dispersed groups, enabling the publication of political information, and helping expand feminist, decolonial and anti-racist discourses.

70

Kishonna Leah Gray-Denson, "Race, Gender, and Virtual Inequality: Exploring the Liberatory Potential of Black Cyberfeminist Theory," *Producing Theory in a Digital World 2.0: The Intersection of Audiences and Production in Contemporary Theory* 2, no.2, Edited by Rebecca Lind (Peter Lang, 2015), 175-192

71

Black Lives Matter is a decentralized movement advocating for non-violent civil disobedience in protest against incidents of police brutality and all racially motivated violence against black people #BLM first went viral in 2013 (Wikipedia)

72

Me Too movement is a social movement against sexual assault and sexual harassment. It was founded by Tarana Burke in 2006 and went viral through social media in 2017 (Wikipedia)

73

Kishonna Leah Gray-Denson, "Race, Gender, and Virtual Inequality: Exploring the Liberatory Potential of Black Cyberfeminist Theory," *Producing Theory in a Digital World 2.0: The Intersection of Audiences and Production in Contemporary Theory* 2, no.2, Edited by Rebecca Lind (Peter Lang, 2015), 175-192

53

KISHONNA LEAH GRAY-DENSON
 "Maybe, in fact, because of Black cyberfeminism's simultaneous engagement in the virtual and physical communities, the master's tools will be able to dismantle the master's house."⁷⁴

74

Ibid.

Touching on digital technology and its relationship to whiteness, technofeminism must also consider the historic and present manifestation of western colonial thinking. In *South Asia digital diasporas and cyberfeminist webs: Negotiating globalization, nation, gender and information technology design*, Radhika Gajjala writes that cyberfeminist celebrations of technology as purely empowering can become a thorny liberalism that misses grasping the wider social and global picture.⁷⁵ With respect to cultural difference and the earthly survival and sustainability of those impacted most by imperialism⁷⁶ and climate change, technofeminism must also understand and reveal the distortion behind universal application, and naive embracement of digital tools, and better grasp computer technology as "*a literal instance of a white ideological mechanism created with the intent of universal application.*"⁷⁷

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Radhika Gajjala, "South Asia digital diasporas and cyberfeminist webs: Negotiating globalization, nation, gender and information technology design" in *Contemporary South Asia* 12 (2003): 41-56, https://www.tandfonline.com/doi/pdf/10.1080/0958493032000123362?casa_token=EPjldL3wa-okAAAAA:IN6yXXOwx056a2Iikwwp8KTfsi00d_taW_uLP4aYSjVFcTRbhjEmE-fiTkYPdSe7wCoye5nKFqkj54w

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policy or ideology of extending the rule or authority of a nation over other nations and people, often through military force or by gaining socio-economic and political control.

77

American Artist, "Black Goey Universe," (Unbag: Winter 2018) <https://unbag.net/end/black-goey-universe>

54

Radhika Gajjala “It is important not to de-historicize digital contexts by erasing the complicity of Western technology and science in colonialist projects.”⁷⁸

78
Radhika Gajjala, “South Asia digital diasporas and cyberfeminist webs: Negotiating globalization, nation, gender and information technology design” in *Contemporary South Asia* 12 (2003): 41-56, https://www.tandfonline.com/doi/pdf/10.1080/0958493032000123362?casa_token=EPjjdL3waokAAAAA:IN6yXXOwx056a2Iikwwp8KTfsi00d_taW_uLP4aYSjVFcTR-bhjEmEfiTkYPdSe7wCove5nKFqkj54w

This is a matter of knowledge. Who can speak on scientific and technological issues? Who is listened to and heard? Here, “*the inclusion of indigenous voices – Sámi in general and Sámi women in particular – is indispensable.*”⁷⁹ Amidst ongoing mining explorations along the Jokkmokk municipality within Sápmi, Sámi people, reindeer herds and environments are being displaced. May-Britt Öhman connects feminist technoscience, yoik, storytelling with her experiences within Sámi activism and culture, writing that “[b]eing part of machines and machinery, science, and technology is a quality not often understood as “indigenous.” More often than not, indigenous peoples are associated predominantly with animals, plants and landscapes.”⁸⁰

79
May-Britt Öhman, “TechnoVisions of a Sámi cyborg: Re-claiming Sámi body-, land- and waterscapes after a century of colonial exploitations in Sápmi” in *Illdisciplined Gender: Engaging Questions of Nature/Culture and Transgressive Encounters*, eds. Jacob Bull and Margaretha Fahlgren (Rotterdam: Springer, 2016)

80
Ibid.

May-Britt Öhman “I am a Sámi cyborg; I am a multitude of identities, places, spaces; of the past, present, and the future; of human and nonhuman; and of nature, culture, and technology.

I am the Julevädno. I am wired to the hydropower plants and the dams of the Julevädno, via the electric transmission lines, to the rest of Sweden, and to the neighboring countries, stabilizing your and my own safe electricity provision. I am the electricity providing your and my own modern life. I reclaim my traditions, my voice. I was trained in a positivist academic tradition, to write about the Sámi – *about myself* – as the other, as objects to be dissected, analyzed, understood, and explained. But I revolt and rebel.”⁸¹

81
Ibid

It is also important, now more than ever, to understand the complexities and intersections of power in regard to anthropocentrism⁸² and to critical issues concerning “the human” and its boundaries. In the book ‘*The End of Man: A Feminist Counterapocalypse*’ Joanna Zylinska writes that within our clouded mix of technofutures, apocalyptic narratives and infinite growth, there remains an “*escapist belief that salvation will come from a supernatural elsewhere.*”⁸³ Zylinska writes that the salvation and the answers that we seek are in fact already here, within us, within those around us. Zylinska is critical of the contemporary naming and conception of the anthropocene⁸⁴ as it fact “*overrides vast amounts of critical work in queer theory, trans-animalities, post-humanism and disability theory*”⁸⁵ that have worked historically to destroy the false essentialism of the “human.”⁸⁶ Technofeminism today must expand to think technology beyond anthropocentrism and restore the social, ecological and material relationship between the human, the

computer and the environment.⁸⁷

⁸²
also called human supremacy or human exceptionalism. This is the inclination to evaluate reality exclusively in terms of human values.

⁸³
Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018) <https://doi.org/10.5749/9781452959757>

⁸⁴
Epoch or geological era in which humanity is a significant and dominating force on the world ecosystem

⁸⁵
Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018) <https://doi.org/10.5749/9781452959757>

⁸⁶
Ibid.

⁸⁷
Corneila Sollfrank, *The Beautiful Warriors. Technofeminist Praxis in the Twenty-First Century* (2019) https://monoskop.org/images/d/de/Sollfrank_Corneila_The_Beautiful_Warriors_Technofeminist_Praxis_in_the_21st_Century_2019.pdf

As we encounter technology's profound ability to alter nature, it raises many ethical questions in regards to what and who is indeed considered "natural" today. Koert van Mensvoort write that "[t]he more we learn to control trees, animals, atoms, and the climate, the more they lose their natural character and enter into the realms of culture."⁸⁸ Helen Hester theorizes *Xenofeminism* as a means to dismantle the fixity of nature, arguing that "biology is not destiny, because biology itself can be technologically transformed, and should be transformed in the pursuit of reproductive justice and the progressive transformation of gender."⁸⁹

Technofeminism means uprooting the forces of oppression that have come to seem inevitable. Zylinska considers a feminist counter-apocalypse in response to the real threat of social-eco-sphere breakdown, and proposes: "If uninterrupted progress is no longer an option, what kinds of coexistences and collaborations do we create in its aftermath?"⁹⁰ Indeed, there are major ramifications of accelerated digital progress which will affect our collective future. Acting now in solidarity with the suffering on/of the planet is crucial. Perhaps the strength of technofeminism (as a label and a discourse today) is its ability to stay with the trouble of technology as it continues to rapidly evolve. In other words, a commitment to de-stabilizing technology and its well-oiled reproduction: "from the family, to the body, to the idea of gender itself."⁹¹

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⁸⁸

Koert Van Mensvoort and Hendrik-Jan Grievink eds., *Next Nature - Nature Changes Along With Us* (Actar, 2012)

⁸⁹

Helen Hester, *Xenofeminism* (Polity Press, 2018)

⁹⁰

Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018) <https://doi.org/10.5749/9781452959757>

⁹¹

Ibid.

<script>... a machine?</script><script>...collaborate with...</script>
<script>...with..</script><script>...or become a...</script> <script>...
the...</script>

The tasks ahead for technofeminist theory and practice are vaste. One being to balance the benefits of media technologies, global connectivity and ubiquitous computers⁹² with the destruction of environmental habitats and harm to lives on Earth, and to insist on softer and more accountable technovisions and actualizations. My desire to understand and think computer technology critically means recognizing that these tasks are also my own, and that this dilemma touches me deeply and extends to those around me. *How can I use computer technology, now, for the purpose of visual communication design?* "[W]hat does it mean to make with, collaborate with, or become a machine?"⁹³ In the pursuit to advance technofeminism as a discourse within visual communication design, I found myself thinking heavily through two theoretical concepts: *QueerOS* and *glitch/fail/error*. In the following sub-chapters, I will outline these concepts and explain how they were useful for composing *OS/error*.

⁹²

omnipresent, pervasive and existing everywhere

⁹³

Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, "Digital crafts-machine-ship: creative collaborations with machines," *Interactions* 27, 1 (December 2019): 30-35, <https://doi.org/10.1145/3373644>

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Donna Haraway “...there is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic.”⁹⁴

94

Donna Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century in *Simians, Cyborgs and Women: The Reinvention of Nature*,” *Simians, Cyborgs and Women: The Reinvention of Nature* (New York; Routledge, 1991): 149-181, <https://theanarchistlibrary.org/library/donna-haraway-a-cyborg-manifesto-1>

Judith Halberstam “...the boundaries between female and male, I argue, are as unclear and as unstable as the boundary between human and machine intelligence.”⁹⁵

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Judith Halberstam, “Automating Gender: Postmodern Feminism in the Age of the Intelligent Machine,” *Feminist Studies* 17, No.3 (Autumn, 1991): 439-460, <https://programaddssrr.files.wordpress.com/2013/05/automating-gender-postmodern-feminism-in-the-age-of-the-intelligent-machine.pdf>

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operating systems as machines
operating systems as organisms
operating systems as brains
operating systems as cultures
operating systems as politics
*operating systems as flux, change and transformation*⁹⁶

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adapted from the table of contents from Gareth Morgan, *Images of Organization* (Sage Publications, 1997) Gareth Morgan proposes a way of understanding organizations through organisms, and through other metaphors employed to describe our processes. One can imagine organizations, he argues, as the process of inputs and outputs, regardless of if it is a machine or organism that interacts with their environments

<script>..with...</script><script>...softening boundaries...</script><script>...or become a...</script>

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In this section I attempt to think deeper through biological/technical, natural/cultural, and human/computer divides and understand how to soften the boundaries of and between social organisms and computational operating systems.

Film theorist and critical race scholar Kara Keeling has formulated the compelling idea of *QueerOS*. Their research frames the “*historical, sociocultural, conceptual phenomena that currently shape our realities in deep and profound ways, such as race, gender, class, citizenship, and ability (to name those among the most active in the United States today), to be mutually constitutive with sexuality and with media and information technologies...*”⁹⁷ Keeling sees sociality and technology as entangled, and therefore finds it counter-intuitive to theorize either in isolation. *QueerOS* posits queer as naming of a specific orientation towards changing existing reality and fixated social norms, which then allows for “*eccentric and/or unexpected relationships in, and possibly alternatives to those social norms.*”⁹⁸

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Kara Keeling, “Queer OS” in *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-157, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf>

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Ibid.

Keeling understands the “*phenomena of identitarian difference*”⁹⁹ as not separate from modular information technologies such

as computers.¹⁰⁰ This phenomena resembles the imperative need to self-identify, which is maintained and encouraged through the design of computer operating systems. Keeling understands the modular designs of early UNIX operating systems as responding to strong contextual and historical changes in the social field ex: mid-century civil rights and social liberation movements.¹⁰¹ These designs fuel neoliberalism, free-market capitalism and mass-surveillance culture where information and data calculations are used to control individuals or groups, allowing for the “*divide-and-conquer mentality that the most dangerous aspects of modularity underwrite.*”¹⁰²

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Kara Keeling, “Queer OS” in *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-157, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf>

100

Ibid.

101

Ibid.

102

Tara McPherson, “Why Are the Digital Humanities So White? or Thinking the Histories of Race and Computation” in *Debates in the Digital Humanities*, ed. Matthew K. Gold (University of Minnesota Press, 2012)

61

TARA MCPHERSON “If the histories of race and racism and of Cartesian mind/body dualisms are embedded in the very partitioned logics of code and the tendrils of the network, there too lie the possibilities for their remaking and undoing, but only if we remain mindful that the forms of the digital are never neutral or innocent.”¹⁰³

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Tara McPherson, “U.S. Operating Systems at Mid-Century: The Inter-twining of Race and UNIX,” *Race after the Internet*, eds. Lisa Nakamura and Peter A. Chow-White (New York: Routledge, 2012), 21-37

american artists “...if the people who designed the computer are anti-black, intentional or not, that will inevitably be reproduced in what they design, especially if it is something meant to serve “people” in general.”¹⁰⁴

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American Artist, “Abstraction, the Irreconcilable: An Interview with American Artist,” interview by Kris Cohen, January 16, 2019, <http://www.open-set.com/krocohen/essay-clusters/abstraction-the-ir-reconcilable-an-interview-with-american-artist/>

Accepting that forms of computer technology are never neutral or innocent means understanding that our social and cultural histories are continuously mapped onto technological machines and that this is a feedback loop without a clear beginning or end. In *On Software, or the Persistence of Visual Knowledge*, theorist Wendy Hui Kyong Chun recognizes that software functions much like ideology.¹⁰⁵ Both software and ideology are rendered visible through signifiers, and as I see it, troublingly posed separate from bodies (or hardware) and encompassing habitual background processes in mind-body entities. This is to also to say that both bodies and hardware and software and minds are entwined and deeply ideological.

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Wendy Hui Kyong Chun, “On Software, or the Persistence of Visual Knowledge,” *Grey Room* 18 (2005): 26-51

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To further contextualize the computer as a nature-culture object, Paul Edwards writes that “[c]omputers do not simply embody masculinity; they are culturally constructed as masculine mental objects”¹⁰⁶ which parallel the ways in which ideological systems of “command and control” have historically subjugated women, L.G.B.T.Q+¹⁰⁷ and BIPOC¹⁰⁸ people. All of the above raises the deep connections between race, gender, sexuality and technology, and reveals how the logic of whiteness and patriarchal power can become neutralized, covert, rendered default, and thus invisible. I recount: Computer technology must always be theorized in connection with the historical

social-political contexts from which it emerged, and any sort of care for software requires equal care for ideology, ethics and morality.

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Paul Edwards, "The Army and the Microworld: Computers and the Politics of Gender Identity," *Signs* 16, no. 1 (University of Chicago, 1990): 102-127

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Lesbian, Gay, Bisexual, Transgender and Queer (the '+' exists to remind us that this group is not limited to just these five)

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Black, Indigenous and People of Color

laboria cuboniks "...digital technologies are not separable from the material realities that underwrite them; they are connected so that each can be used to alter the other towards different ends." ¹⁰⁹

109

Laboria Cuboniks, *Xenofeminist Manifesto* (2015) <http://www.laboriacuboniks.net/>

In light of any information that would have us believe that computer technologies are post-racial and post-gender queer utopias, frame-works for surveillance and difference through typification rather reveal the ways in which computing itself can be reductive and enacts erasure.¹¹⁰ In *Does the Whatever Speak?* Galloway writes that the "body is always cybertyped..."¹¹¹ and "it is always tagged with a certain set of affective identity markers..."¹¹² Through *QueerOS*, I was motivated to explore how queerness and queer computing could be a useful in softening boundaries of and between the human, the computer and the environment. Such a logic would then require thinking beyond the strictly systemic order of hierarchical, modular, disciplinary, and identitarian operating systems which currently power our machinery and shape our social organization.¹¹³

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Alexander Galloway, "Does the Whatever Speak?" in *Race After the Internet*, eds. Lisa Nakamura and Peter Chow-White (Routledge, 2012)

111

Ibid.

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112

Ibid.

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Kara Keeling, "Queer OS" *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-167, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf> ; American Artist, "Black Goey Universe," *Unbag* (Winter 2018) <https://unbag.net/end/black-goey-universe>

<script>...and visual communication design.</script><script>...become a machine...</script><script>How can I communicate...<script><script>...softening boundaries...</script>

In the article *Toward a Queer Digital Humanities*, the authors expand queer technology and contextualize queer praxis within digital humanities as realized through five routes: "speculating on the interconnected histories of queerness and computing, imagining the queering of the fundamental structures of computing technologies, conceptualizing queerness itself as a technology, exploring the queerness of code, and utilizing concepts of "speculative computing" to enact queer work."¹¹⁴ This has been helpful for me to understand my practice through these possible domains, as a places where an operating system intended for failure is possible.

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<script>How can I communicate...<script>

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Bonnie Ruberg, Jason Boyd, and James Howe, "Toward a Queer Digital Humanities," *Bodies of Information, Intersectional Feminism and Digital Humanities*, eds. Elizabeth Losh and Jacqueline Wernimont (University of Minnesota Press, 2018) <https://dhdebates.gc.cuny.edu/read/d02c3ed5-0c55-4de9-88de-5f543fecdl30/section/ela72933-2aef-4158-b21c-e6fe35afc091#ch08>

To understand *OS/error* as a conceptual and speculative work of design, it was important for me to follow the logic that language should be creative, decomposed and reutilized for political use. I found that through creative writing, code (here in the form of software) could be reclaimed and its potential expanded. Like *QueerOS*, *OS/error* functions to name "a way of thinking and acting with, about, through, among, and at times even in spite of new media technologies and other phenomena of mediation"¹¹⁵ and for lack of better words, depicts a sort of "theoretical vapourware, speculative potentialware, ephemeral praxis."¹¹⁶ Through grasping queer praxis within digital humanities, I have chosen to lean into speculative design, where creative productions of speculation work to disrupt the present in addition to shaping the

future.¹¹⁷ This has helped me to believe that the operating system I would create, did not need to be functional (in any conventional computational sense) in order to “work.”

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Kara Keeling, “Queer OS” in *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-157, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf>

116

Fiona Barnett, Zach Blas, Micha Cárdenas, Jacob Gaboury, Jessica Marie Johnson, and Margaret Rhee, “QueerOS: A User’s Manual” in *Debates in the Digital Humanities* (University of Minnesota Press, 2016) <https://dhdebates.gc.cuny.edu/read/untitled/section/e246e073-9e27-4bb2-88b2-af1676cb4a94>

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Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming* (MIT Press, 2014)

2.2.2 Glitch/Fail/Error

ROSA MENKMAN “I am of the opinion that flow cannot be understood without interruption or functioning without glitching.”¹¹⁸

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Rosa Menkman, *Glitch Studies Manifesto* (2010) https://beyondresolution.nyc3.digitaloceanspaces.com/_Rosa%20Menkman%20-%20Glitch%20Studies%20Manifesto.pdf

JACK HALBERSTAM “And what kind of rewards can failure offer us?”¹¹⁹

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Jack Halberstam, *Queer Art of Failure* (Duke University Press, 2011)

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CARLOS EDUARDO SOARES “The poetics inherent to failure seems to be that of revealing a hidden world we were made blind to.”¹²⁰

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Carlos Eduardo Soares, “Erratic diversity: Failure as feedstock creative,” *Keep It Simple Make It Fast! An Approach to Underground Music Scenes 3*, edited by Paula Guerra and Tânia Moreira (Universidade do Porto, 2017): 149-153, https://monoskop.org/images/4/42/Keep_It_Simple_Make_It_Fast_An_Approach_to_Underground_Music_Scenes_3_2017.pdf

From *QueerOS*, I will follow with another pathway for building a bridge between digital and biological divides. Failures, glitches and errors, whether known as mistakes or learning experiences, are consistently present in life. It is therefore this concept of error that I wish to deepen and become more in tune with. I reflect now on how error is discussed (or not discussed) in my personal life. More often, error is argued to restrict efficient “progress” or the “natural” reproduction of society. Errors are framed as interruptions which negate, or are deemed negative as in bad. When considering progress in relation to the human, the computer and the environment, I rest on the glitch/fail/error and its affixation with a high level of undesirability – as something unwanted because it breaks from the continuous flow of expectations of what is predictable and predicted. I am now searching for a fuller meaning of failure, in order to be able to grasp its potential as a generative¹²¹ disruption to the common sense of the human, the computer and the environment.

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production, reproduction and evolutionary change.

Juliana Luchkiw writes that the “glitch’s behavior departs from an expected, “useful” function, it is a not-yet-defined rupture of teleology that opens up a critique of the system from which it breaks.”¹²² In addition, Lucia Egaña Rojas describes error as an event that is made delegitimate: “When something with a specific functionality does something different to what is planned.”¹²³ This eventful activity remains not just risk, but the error or failure “becomes a delegitimized area, which is why it is difficult to speak and write about mistakes and errors. This

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difficulty allows them to eventually fall into oblivion, cloaked in silence and invisibility.”¹²⁴

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Juliana Luchkiw, Situating Glitches: Networks of Knowledge Production” in *Signal/Noise: Collected Student Works From a Feminist Docc 1*, no.1 (2016) <http://femtech.net.org/signalnoise-voll-is-suel-situating-glitches-networks-of-knowledge-production/>

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Lucia Egaña Rojas, “Contingent Feminist Tactics for Working with Machines” *after.video*, eds. Oliver Lerone Schultz, Adnan Hadzi, Pablo de Soto and Laila Shereen Sakr (Open Humanities Press, 2017) https://www.metamute.org/sites/www.metamute.org/files/ul/after-video_assemblages_9781906496234.pdf

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Ibid.

Rosa Menkman “Use the glitch as an exoskeleton of progress.”¹²⁵

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Rosa Menkman, *Glitch Studies Manifesto* (2010) https://beyondresolution.nyc3.digitaloceanspaces.com/_Rosa%20Menkman%20-%20Glitch%20Studies%20Manifesto.pdf

I realize that there are many ways in which one could discuss glitch/fail/error. I also recognize that these are three distinct categories, that I have now merged together for my own theoretical pleasure. My entry point is through the lens of queer theory and experience, where I have known queer gender and sexual relations to be delegitimized areas for conversation in my upbringing, rendered invisible through design in my environment, and for a long time effectively silenced. Error and failure have opened up an array of questions about the useful and natural functions of the gendered and sexed body. Useful to whom? Natural for what? When the operating system glitches on my computer, I am confronted with a visual manifestation of my computer interface resisting binary language (0 and 1 programming). This failure also exists away from my keyboard as “glitched bodies themselves “refuse... order..” in wandering within a wildness of unrecognizable being, actively re-imagining and re-centering neoteric realities.”¹²⁶

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Legacy Russell, *On #GLITCHFEMINISM and The Glitch Feminism Manifesto* (2017) <http://beingres.org/2017/10/17/legacy-russell/>

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Legacy Russell “Is the glitch body a [feminist] fantasy? Or is it the future of body politic, a signaling of a next chapter, an opportunity to amend the violence and divisive conservatism of normativity?”¹²⁷

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Legacy Russel, “Elsewhere, After the Flood: Glitch Feminism and the Genesis of Glitch Body Politic,” *Rhizome*, March 12, 2013, <https://rhizome.org/editorial/2013/mar/12/glitch-body-politic/>

I learned from the theorist Legacy Russell that the word “glitch” may have in fact derived from ‘glitsh’ (Yiddish for a slippery place) which comes from ‘glitshn’, meaning to slide, or glide. Perhaps the worldly manifestations of glitches, could be better understood more closely as a history of movement. In *Digital Dualism and the Glitch Feminism Manifesto*, Legacy Russel affirms the glitch at a time when society “has already been disturbed by economic, racial, social, sexual, and cultural stratification and the imperialist wrecking-ball of globalization.”¹²⁸ Which is to say a wide-spanning process of violence towards all bodies. Bridging glitch/fail/error with feminism requires the will to embrace the causality of error, and unpack negative implications assigned to the glitch –and knowing that the glitch “may not, in fact, be an error at all, but rather a much-needed erratum.”¹²⁹

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Legacy Russel, “Digital Dualism And The Glitch Feminism Manifesto,” *The Society Pages* (2013) <https://thesocietypages.org/cyborgology/2012/12/10/digital-dualism-and-the-glitch-feminism-manifesto/>

129

Ibid.

As a phenomenon and practical form of abstraction, the glitch/fail/error generates a powerful opening that cracks the illusion of what was once clearly defined. Its subversive potential is that it unsettles a logic that secures smoothness, rationality, predictability and order as intrinsic values. It opens up an unintentional critic, resisting a culture of measurement and calculation, and maintaining the functions of inefficiency, inaccessibility, delay and heterogeneity.¹³⁰ I understand

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the glitch/fail/error is a commonality shared amongst the human, the computer, and the environment. It operates as destructive/constructive moments and movements within “*operating systems of a larger order*.”¹³¹ Here I see the parallel potential in queerness (as a mode of political resistance) to the taxonomy of identity and sexuality and am reminded that the glitch/error/fail is not just for a specific group, but for “*all bodies that exist somewhere before arrival upon a final concretized identity that can be easily digested, produced, packaged, and categorized by a voyeuristic mainstream public*.”¹³²

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Legacy Russel, “Elsewhere, After the Flood: Glitch Feminism and the Genesis of Glitch Body Politic,” Rhizome, March 12, 2013, <https://rhizome.org/editorial/2013/mar/12/glitch-body-politic/>

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Kara Keeling, “Queer OS” in *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-157, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf>

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Legacy Russel, “Digital Dualism And The Glitch Feminism Manifesto,” The Society Pages (2013) <https://thesocietypages.org/cyborgology/2012/12/10/digital-dualism-and-the-glitch-feminism-manifesto//>

In returning to the thought of movement, Legacy Russell writes about the glitched body as forever being in a transitional state, “*sliding between identifications, a nod toward trans politic that extends beyond the notion of “trans” as fixed to modifying notions of assigned sex, the psychology of gender, and the histories of self-naming, but rather trans as a means of extrapolating liminal variations of self*.”¹³³ In the human, the computer and the environment, the glitch is in the area of incomprehensibility and resistance to binary code. In regard to sexuality and gender, this brings me “[a]gainst a historical discourse about the body that bends to a heteronormative narrative in its glorification of an origin story.”¹³⁴

In *The Queer Art of Failure* Halberstam advises that “[q]ueerness offers the promise of failure as a way of life...but it is up to us whether we choose to make good on that promise in a way that makes a detour around the usual markers of accomplishment and satisfaction.”¹³⁵ Failure has the potential to bring about a process of critical awareness about norms of performance and satisfaction that are believed to constitute the “good life.” Operating in this manner requires disidentifying from the usual and hence normative values, and grasping queerness as a boundary relationship that depends as much on the presence of norms in order to shape itself against. In other

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words any sense of natural, usual or normal is also indeterminate and forever changing.

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Legacy Russel, “Elsewhere, After the Flood: Glitch Feminism and the Genesis of Glitch Body Politic,” Rhizome, March 12, 2013, <https://rhizome.org/editorial/2013/mar/12/glitch-body-politic/>

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Legacy Russell, “On #GLITCHFEMINISM and The Glitch Feminism Manifesto,” (London: Res., 2017) <http://beingres.org/2017/10/17/legacy-russell/>

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Jack Halberstam, *Queer Art of Failure* (Duke University Press, 2011)

ROSA MENKMAN “For a moment I am shocked, lost and in awe, asking myself what this other utterance is, how was it created. Is it perhaps...a glitch? But once I named it, the momentum — *the glitch* — is no more...”¹³⁶

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Rosa Menkman, *Glitch Studies Manifesto* (2010) https://beyondresolution.nyc3.digitaloceanspaces.com/_Rosa%20Menkman%20-%20Glitch%20Studies%20Manifesto.pdf

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3 Research Methods

- 3.1 Autotheory
- 3.2 Mixing

Donna Haraway: “It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.”¹³⁷

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Donna Haraway, *Staying with the Trouble* (Duke University Press: 2016)

My research concerns the question of “how?” *How can I communicate the softening boundaries of and between the human, the computer and the environment?* Asking how to do it led me to carefully consider the methods I needed to use.

Computer technology holds different meanings for people in the world. These meanings come from our differing experiences of being in the world. As a person who was raised before and also after access to the computer, I am privileged and contradictory. I am perpetually oscillating between nostalgia for pre-computer times and techno-deterministic future visions. My relation to computers in the present is uncomfortably dualistic, in part due to my location in history. In the introduction of this thesis, I historically situated my boundary relations and reflected on the experiences in my life that underscore my relationship to identity and technology.¹³⁸ In order to make a project that comments on computer technology, it was important for me to think through my own experiences to better understand my own positioning and place of criticality.

Autotheory as a method shows itself predominately in literary

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and artistic work where there is usually some mixture of theory and personal narrative, although both the structure and approach can vary drastically. In *Autotheory and Artist's Video: Performing Theory, Philosophy, and Art Criticism in Canadian and Indigenous Video Art, 1968-2018*, Lauren Fournier see the method in artistic video practice and writes that works of autotheory “*straddle biographical, performative and theoretical registers of enquiry*”¹³⁹ and can be applied more broadly as integrating “*autobiography and other explicitly subjective and embodied modes with discourses of philosophy and theory.*”¹⁴⁰ Through researching visual communication design and technofeminism, I found autotheory to be a prevailing method in numerous creative work at the intersection of these domains, even if unarticulated as such by the artists and designers themselves.

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see chapter 1.1 Point of origin

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Lauren Fournier, “Autotheory and Artists's Video: Performing Theory, Philosophy, and Art Criticism in Canadian and Indigenous Video Art, 1968-2018” (Toronto: Vtape, 2018) <https://files.cargocollective.com/604927/2019-Autotheory-by-Lauren-Fournier.pdf>

140

Ibid.

76

<script>How can I communicate...</script><script>...the softening boundaries of...</script><script>...by way of...</script><script>...technofeminism and...</script>

In the practical outcome *OS/error*, I applied autotheory specifically to the poetry and video components, which entailed a performative mode of referencing philosophy and critical theory. This method can also be seen in the overarching conceptual framing of *OS/error*. It remains unclear if *OS/error* is actually a “who” or a “what.” To put myself into this work, I filmed myself in the environments that I operate in and that I am also a part of. I am outdoors. I am a cursor moving on the screen. I am a body in and of the environment. Documenting and then ultimately combining my action in both of these spaces became a way to visually merge my lived experiences in space/time. For a long time I referred to the video I was recording as documenting. Coincidentally, filmmaker and writer, Trin Min Ha understands no such thing as documentation/documentary, elaborating that even though we attempt neutrality in our scholarly work, “*it's illusory to take the real and reality for*

granted and to think that a neutral language exists... ”¹⁴¹ “To use an image is to enter fiction.”¹⁴² Therefore this method approaches filming and representation as a way of constructing and fictioning (my)self through performance and design.

Reflecting on and writing about my embodied experiences with technology has been a fundamental thinking tool for creating this work. In many ways this aligns *OS/error* with other markedly feminist writing and making. Lauren Fournier also ponders on the broader history of feminist theory and creative practice, as a domain that tends to embodied experiences. Fournier writes that the attraction to autotheory is familiar and if not perhaps even a founding principle that enables most feminist work.¹⁴³ This research uses autotheory as a way of generating narrative from my own lived experiences to illuminate critical theory through creative practice.

Autotheory allowed a more situated understanding about my experience in relation to the human, the computer, and the environment. Through reading and relating to critical theory, as well as connecting to the specificity of my own experience, I recognize that time, location, sex, gender, ability, culture and class etc. are all central factors which determine my knowledge of and relationship to technology. These are the important intersections which make up the social apparatus that my technovision is filtered through. Tending to, and re-centering my embodied history as a method in this work allows me to be critical and intervene in traditional ways of speaking about technology, and be listened to with respect to the complexity of differing experiences and relationships with technology that exist in the world.

Composing a project about the human, the computer and the environment required understanding that my knowledge and vision is a partial perspective in the whole of the world, nominal but also crucial to forming any semblance of broader objective truth.¹⁴⁴ To resist a disembodied gaze from above, means to reckon with knowing that I am not an all-seeing “I” on matters of the human, the computer and the environment, but rather situated locally on the ground among others, in a world where shaping objectivity, or common sense, is a task that requires everyone. The critical viewpoints I raise in *OS/error* and in this thesis resonate with/in me, and in many ways are an echo of voices and experiences of others who I’ve listened to. In this relationality, autotheory (as a method) reveals a curious blurring between (my)self and others.

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141

Trinh H. Minh-ha, “There is No Such Thing as Documentary’: An Interview with Trinh T. Minh-ha,” interview by Erika Balsom, in *Decolonizing Culture: Where do we go from here?*, Frieze 199 (2018) <https://frieze.com/article/there-no-such-thing-documentary-interview-trinh-t-minh-ha>

142

Ibid.

143

Lauren Fournier, “Autotheory and Artists’s Video: Performing Theory, Philosophy, and Art Criticism in Canadian and Indigenous Video Art, 1968-2018,” *Vtape* (Toronto: 2018) <https://files.cargocollective.com/604927/2019-Autotheory-by-Lauren-Fournier.pdf>

144

Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (1988): 575-99.

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3.2 Mixing

سارا أحمد “...bodies are submerged, such that they become the space they inhabit...”¹⁴⁵

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Sara Ahmed, *Queer Phenomenology: Orientations, Objects, Others* (Duke University Press, 2006)

With autotheory near, I would like to briefly touch on several facets of theory which support mixing as a second applied method and overall guiding principle for composing *OS/error*. In visual communication design practice, I understand mixing to translate to the very practical and literal mixing of material and meaning that occurs through visual communication. I also link this with the artistic production of hybridity, intertextuality, abstraction and multi-layering – artistic methods common in many postmodern and critical works of art and design. To compose *OS/error*, mixing is applied as a practical

method that required bringing “difference” together through tending to similarities in language, sound, and visual form. For example, to produce the video this process resembled contaminating layers of moving image with other layers moving image, allowing abstraction and visual failures instead of clarity and order.

On a theoretical level, I understand the method of mixing as being rooted in feminist scientific and philosophical theory. Mixing is a way to communicate that we are always in the process of exchange, co-formation and ongoing transformation – *relationally* – as in with others.¹⁴⁶ In this sense, the perception of individual entities is complicated and relationality becomes an interesting model for human subjectivity. Critical of the image of the human posited over the world, separate from the environment habitat and making interventions, relationality rather “*acknowledges the prior existence of relations between clusters of matter and energy that temporarily stabilize for us humans into entities – on a molecular, cellular, and social level.*”¹⁴⁷

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Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007) <https://llib.eu/book/884681/fabe9a?regionChanged=&re-direct=7046506>

147

Joanna Zylińska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: University of Minnesota Press, 2018), <https://doi.org/10.5749/9781452959757>

Existential ponderings have led me to reconsider nature through materiality. I found that the theoretical physicist and feminist theorist Karen Barad is moving forth the idea that we exist primarily in relation to our many entanglements with the world. Through the idea of entanglement, Barad understands entities¹⁴⁸ as co-constitutive, emerging from their interactions with each other rather than pre-existing them. This adds complexity to the idiom “everything is connected,” as entanglements rather implies that everything exists with and because of the other. In other words, I entrust the stability of all that is other, for the stability of the embodiment I call my own.¹⁴⁹ Although the boundaries (which individuate) may seem hardened, mixing implies that they are fundamentally porous.¹⁵⁰ This makes the notion of a unified, autonomous self questionable, not just on the subjective level but also on the particle level.¹⁵¹

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Karen Barad defines what is “other” as that of a differentiation (co)constituted (together with the “human”) through particular “cuts”.

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Although contemporary new materialist theories have been articulated to me by feminist theorists in a way that feels timely and relevant, thinking along similar lines has been founded on Eastern philosophy and indigenous knowledge systems.

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Consisting of pores or membranes. Permeable to outside influences and refers to “passages.”

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Karen Barad, “On Touching –The Inhuman That Therefore I Am,” *Differences* 23 (2013)

To add another ingredient, Barad articulates the notion of the inhuman, to be an energy which moves through materiality, manifests, and underpins what we collectively determine as other, or as not human. The idea of the inhuman raises a crucial negation, which for Barad, does not indicate absence but rather the infinite abundance of openness and possibility. In other words, the inhuman reveals the establishment and regulation of the human. It is “*that which holds open the space of the liveliness of indeterminacies that bleed through the cuts and inhabit the between of particular entanglements.*”¹⁵² Here I link Barad’s notion of the inhuman with manifestations of the glitch. Furthermore, the “*liveliness of indeterminacies*”¹⁵³ resonates strongly with the heterogeneous diversity that queerness offers and names an energy that softens hardened boundaries and fixed “*agential cuts.*”¹⁵⁴

152

Karen Barad and Adam Kleinmann, “Interview of Karen Barad by Adam Kleinmann,” in *Special DOCUMENTA (13) Mousse Magazine* 34, no.13 (2012): 76-81

153

Ibid.

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“cuts” as in the ontological demarcations or boundaries for the purposes of acting with agency in the world. Karen Barad, “On Touching –The Inhuman That Therefore I Am,” *Differences* 23 (2013)

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BONNIE RUBERG, JASON BOYD, and JAMES HOWES “Queerness too represents a risk, a place at the edge of unsafety; yet this same space is the space of possibility.”¹⁵⁵

Bonnie Ruberg, Jason Boyd, and James Howe, "Toward a Queer Digital Humanities," *Bodies of Information, Intersectional Feminism and Digital Humanities*, eds. Elizabeth Losh and Jacqueline Wernimont (University of Minnesota Press, 2018), <https://dhdebates.gc.cuny.edu/read/d02c3ed5-0c55-4de9-88de-5f543fecdl30/section/ela72933-2aef-4158-b21c-e6fe35afc091#ch08>

<script>...boundaries of and between...</script><script>..the softening...</script><script>..by way of...</script><script>...and...</script><script>...and visual communication design?</script>

As a method mixing has stirred my thinking. In theory and in practice, it has allowed me to begin to challenge rational separation and reductive thinking about the human, the computer and the environment and instead tend to their materiality, hybridity and co-constituted nature of becoming.¹⁵⁶ It has allowed me to question (my)self as any stable sense of (my)self. The theories I have encountered through forming this method have guided me to understand my experience of the world in a way that centers my relationship with otherness – as a visually marked difference and not as something apart from me. “The “not me” is incorporated into the body, extending its reach...”¹⁵⁷ This is to say: what is apart from me is the indispensable part of my embodiment.

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Under the real experience of being born into this world – corporeal into dualisms and binary logic – comprehending mixing entails thinking difference and otherness, matter and meaning as a significant phenomena of our shared making. It is here where I can begin to fathom the possibility of a shared wholeness that is diverse, infinite, unmeasurable and indeterminate. Perhaps through using visual communication design I can communicate that process.

major philosophical concept that refers to process, change and impermanence

Sara Ahmed, *Queer Phenomenology: Orientations, Objects, Others* (Duke University Press, 2006)

In the next chapter I unfold *OS/error* as the practical outcome of this thesis and contextualizes the project through its three main components: video, poetry and sound.



```
13 if <body>
14 then 'NeverPure';
15
16
17
18
19 of 'fingers';
20 open source <body>
21 edit
22 + add section
23 - remove section
24 transform_with_intent
25
26
27 import stylesheet: 'G
28 apply <header> to <f
29
30
31
32
33
```


4 Composing OS/error

- 4.1 Video
- 4.2 Poetry
- 4.3 Sound

†Eiñ mĩñ †/d3 “To use an image is to enter fiction.”¹⁵⁸

158

“There is No Such Thing as Documentary: An Interview with Trinh T. Minh-ha,” Erika Balsom, 2018, *Frieze*, <https://frieze.com/article/there-no-such-thing-documentary-interview-trinh-t-minh-ha>

The use of video in the practical outcome of this thesis acknowledges the substance of visuality, and the potential that moving image has in expanding the composition, decomposition, and representation of the perceivable world. Through my research I found that video is a common medium in which to visually communicate technofeminist theory.¹⁵⁹ The aesthetics of moving glitch imagery gives the possibility to interpret multiple meanings and draw attention to the softening boundaries of and between the human, the computer and the environment.

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see chapter 2.1 Visual communication design

†Kim @d3@0w€3 “Indeed, ‘failure’ has become a prominent aesthetic in many of the arts in the late 20th century, reminding us that our control of technology is partly an illusion,



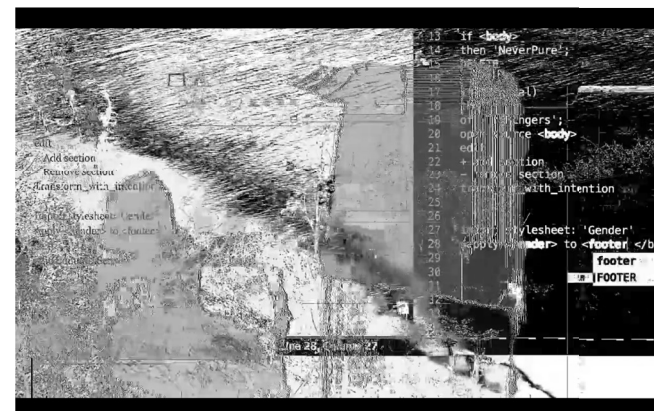
87

and revealing digital tools to be only as perfect, precise, and efficient as the humans who build them.”¹⁶⁰

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Kim Cascone, “TheAesthetics of Failure: “Post-Digital” Tendencies in Contemporary Computer Music,” *Computer Music Journal* 24, no.4 (MIT Press, 2002)

Mixing as an applied method to video, required combining

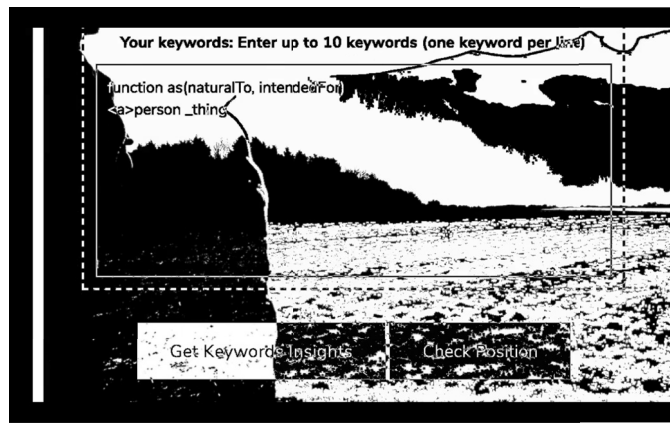


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different layers of video together in order to reveal new forms and allow for unforeseen boundary delineations to appear. Through its application I produced visual abstraction, as a way to challenge the viewer to make sense of the structure and limits of their own perception. As a practical method, mixing enables distorting familiar perceptions of fixed categories and is a way to soften form and boundaries

of separation. In my experimentation with editing and blending the footage, I observed when interesting connections arose between the overlapping video layers. In this process, I paid special attention to when the visual layer of my computer screen became overpowering, or when the human layer became effectively indistinguishable from the environment. I worked with the computer to achieve a more balanced and harmonized representation of reality.

In composing the video, I discovered that experimentality through mixing video requires both a doing and a letting go. For example, working under a construct and at the same time letting go in order to give the video a chance to become. For the videos, I followed a rule that I would always aim to include a “human/animal,” “environment/landscape” and “computer/interface” layer in the videos, all the while knowing that such distinctions can be misleading, contradictory, and reductive. Hovering near but without achieving full abstraction, I worked with my computer to dismantle the visual delimitations of these common sense categories. In the videos, landscapes, screens, objects and bodies mix into one another and refuse to be understood as separate entities. Boundaries form and dissolve. Materiality seeks



refuge and retreats into the unknown, into abstraction, avoiding capture, orderly classification, and clear-cut representation.

`<script>...technofem-
insim and visual com-
munication design?</
script><script>...by way
of...</script><script>...`

`softening...</script>`

Some may think of abstraction as a refusal of representation, but I've noticed that artists and designers seeing from queer perspectives have embraced it specifically because of the ways it can challenge visual expectations and generate strange possibilities. In *Ten Queer Theses on Abstraction* David J. Getsy writes that “artists have found in abstraction a way to resist the ways in which the human form is categorized, marked, and stereotyped [...] Recognizing that the politics of visibility bring with them increased surveillance and scrutiny.”¹⁶¹ Similarly, in the article *Queer Abstraction, Then and Now*, Jared Ledesma writes that abstraction as a visual strategy is particularly useful as a means of discussing questions of difference, intersectionality,¹⁶² and power because it asks the linked questions “What is visible?” and “What are you looking for?”¹⁶³

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David J. Getsy, “Ten Queer Theses on Abstraction” in *Queer Abstraction Exhibit Catalogue*, edited by Jared Ledesma. (Iowa: Des Moines Art Center, 2019): 65-75. <https://www.saic.edu/~dgetsy/Publications-Files/Publications2-Articles/Gettsy-QueerThesesOnAbstraction-2019.pdf>

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framework for understanding how multiple categories of identity (such as sexuality, gender, race, ability and class) interact and result in complex interconnected systems of privilege and oppression.

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Jared Ledesma, “Queer Abstraction, Then and Now: Visualizing the complexities of desire and sexuality,” in *Other Words Special Issue: The 50th Anniversary of Stonewall* (2019) <https://www.artagencypartners.com/world-pride-jared-ledesma/>

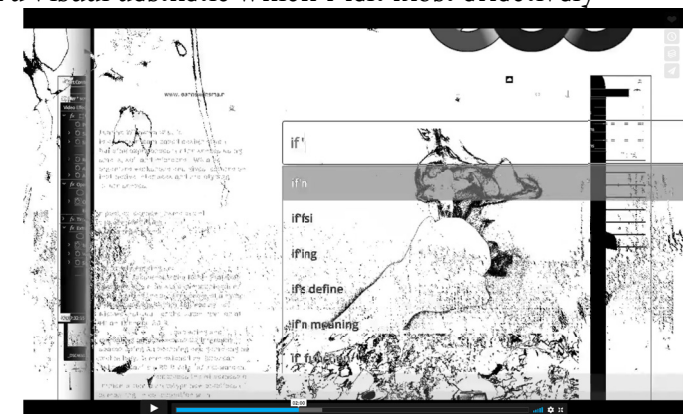
`<script>...the human, the computer, and the environment...</script>`

89

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`<script>...make with, collaborate with or become...</script><script>...a...</
script><script>...by way of...</script>`

The process of composing video became a timely repetition of transferring files from my camera to my computer and then mixing and layering them with computer software. Mixing unedited video through post-production produced a way for detail to be lost and abstracted in some areas and then preserved in other areas. Here, I experimented with different filter effects to add and extract light from the pixels of the video. Eventually I landed on a visual aesthetic which I felt most effectively dissolved boundary separation, and depicted the human, the computer and the environment as an interconnected whole. The filter effects that were most effective for this (in the editing



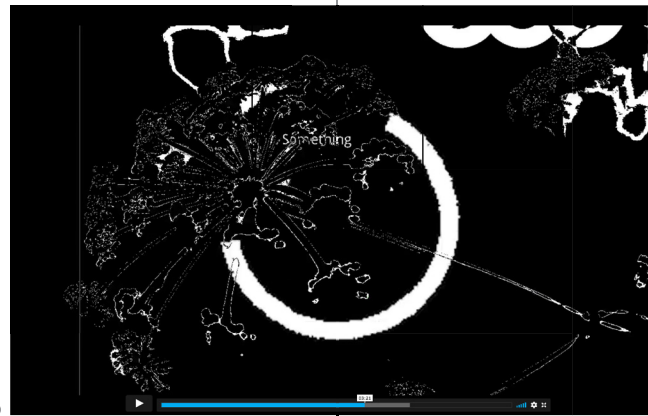
software Adobe Premiere Pro) were named “exclusion” and “difference.”

Tabita Rezaire “...the relationship between darkness and light in Western culture is very much one of opposition, light being associated with positive elements: life, goodness, heaven, while darkness carries negative attributes: death, danger, evil. This narrative is also carried as a common trope within racial hierarchies. Darkness also comes to mean the unknown and as the West is so uncomfortable with not knowing, that it vilifies everything outside of its premises of understanding.”¹⁶⁴

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Tabita Rezaire, Artist Profile: Tabita Rezaire interview by Eleanor Ford, *Rhizome*, February, 1, 2018, <https://rhizome.org/editorial/2018/feb/01/artist-profile-tabita-rezaire/>

In designing, editing and composing the videos, I considered rhythm, timing and repetition and color. For the most part the videos operate fully in greyscale, apart from glimpse moments of a reality that is perhaps more familiar. The use of greyscale was a deliberate choice



to reveal, highlight and attempt to balance extreme polarities such as positive/negative and lightness/darkness. The video for *OS/error* presents a means to fiction and make visible softening boundaries of and between the human, the computer and the environment and reveal a world that is in an ongoing process of mixing.



4.2 Poetry

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Caspar Heinemann “Poetry becomes the language of survival in excess and weaponised floweriness, everything that is ‘*too much*’ pushing back against false scarcity and repressive taxonomies of gender and sexuality, creating breathing space for a politics of cornucopia, possibility and, propagation outside the already-existing.”¹⁶⁵

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Caspar Heinemann, *FUCKING PANSIES: Queer Poetics, Plant Reproduction, Plant Poetics, Queer Reproduction*, Dissertation (2016) <https://blog.ecocore.co/post/161819858724/fucking-pansies>

fiona barnett / zach blas
/ micha cardenas / jacob
gaboury / jessica marie
johnson / margaret

Rhee: “The choice of metaphors
for an operating system that would
organize social formations is an in-
credibly delicate choice to make.”¹⁶⁶

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Fiona Barnett, Zach Blas, Micha Cárdenas, Jacob Gaboury, Jessica Marie Johnson, and Margaret Rhee, “QueerOS: A User’s Manual,” in *Debates in the Digital Humanities* (University of Minnesota Press, 2016) <https://dhdebates.gc.cuny.edu/read/untitled/section/e246e073-9e27-4bb2-88b2-af1676cb4a94org/10.1145/3373644>

As the video work developed and theoretical research expanded, my concept became clearer and I began to frame the project as *OS/error: Searching, Scripting, Functioning, Building, Aligning and Scrolling*. “The parts” then became six modes, actions and activities for a speculative operating system favourable to error. I wanted the titles of the different video tracks to be meaning-heavy words, which could bridge the technological, spatial and social realms. This resulted in a process of mixing and study of metaphor, multi-meaning words and poetic writing. The creative writing component of this part of the work is therefore based on consideration of what in the system of English language operates as metaphoric cross-over when describing the human, the computer and the environment.

In the writing process, I discovered that linguistic parallels between our social world and the digital world are abundant. As Helen Hester writes in *Xenofeminism*: “Technology is as social as society is technical.”¹⁶⁷ Mixing computer language and social language was surprisingly fluent. In *Images of Organisation*, Gareth Morgan writes that “the mechanical way of thinking is so ingrained in our everyday conception of organisations that it is often difficult to organise in any other way”.¹⁶⁸



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Helen Hester, *Xenofeminism* (Polity Press, 2018)

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Gareth Morgan, *Images of Organization* (Sage Publications, 1997)
Gareth Morgan speaks to many metaphors such as ‘cogs in a wheel’, ‘leverage’, ‘reengineering’, ‘running like clock-work’, and ‘a well-oiled machine’ which speak more to analog machines and historical technology.

`<script>...softening...</script>``<script>... boundaries of and between...</script>``<script>...or become a machine?</script>`

The decision to approach writing poetry came after months of avoiding writing poetry. After trying and not succeeding with other approaches which used direct references, or assembling voices through script writing, I eventually I wrote out my own words in code poems. The writing felt much more personal this way, and I was able to connect with what it could possibly mean to become a machine. The intention with my writing and framing was to interpret the actions/activities of what I do with my personal computer in new ways. This would then become the basis of speculating a queer kind of OS and allude to “*operating systems of a larger order*.”¹⁶⁹ The linear syntax structure of written computer code felt already poetic in form and worked well to communicate the operating system as a multi-layered metaphor. My writing was done through exploring poetic and computational syntax, composing rhythm, defining typographic structure.

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Kara Keeling, “Queer OS” in *Cinema Journal* 53, no.2 (University of Texas Press, 2014): 152-157, <https://criticalracedigitalstudies.com/wp-content/uploads/2018/05/QueerOS.pdf>

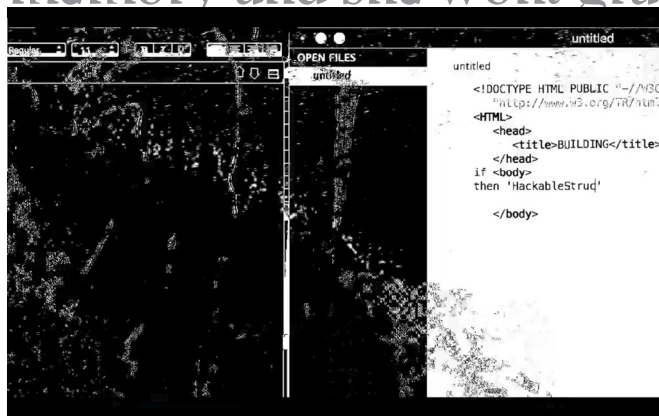
`<script> repeats itself`
`Unless you happen to intervene`
`@least {try to.shift}`
`‘TheRepetitionOfTheScript’`
`reach ‘Undefined.Syntax’`
`Do you ask or do you assume?`
`Find (); ‘CriticalThinking’, ‘NonViolentCommunication’,)`
`Read(); the script`
`Then reWrite(); it`¹⁷⁰

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‘Scripting’ from *OS/error*

I understand poetic writing as a means to mobilize words for political purposes. Here I was deeply inspired by the technofeminist manifestos *A Tender Hex for the Anthropocene* by VNS Matrix and *Tech-illa Sunrise (.txt con sangrita)* by Rafael Lozano-Hemmer and Guillermo Gómez-Peña, as writing which mixes socio-political language with language that is known to the computer and its users. This is done through the poetic arrangement of meaning-full words which soften divides and operate across digital, analog and biological material realities.

Rafael Lozano-Hemmer /
Guillermo Gómez-Peña: “who
do you think is your sysadmin?
it’s lupita, your service provider!
that’s right, lupita is the real moth-
erboard, la gran coatlicue digital, la
matrix chola. born multi-tasking and
multithreading, she has protected
memory and she wont grant you access
privileges.



y wáchala
porque se
come a sus
hijos! she
eats her own
children. she

laughs at your binary code, *&%\$^&
when you try to digitize, *#@\$!%^

95

scan*!~@\$+(* and sample**&^^^%/or#
the world with a simple yes/no, a one
or a zero*^0/%#)(+^ black/white, in/out.
norte/sur.”¹⁷¹

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Rafael Lozano-Hemmer and Guillermo Gómez-Peña, “Tech-illa Sunrise* (.txt dot con Sangrita)”, ARARA 12, *The Poetics and Politics of Humour in Contemporary Art* (2002) <https://www1.essex.ac.uk/arthis-tory/research/pdfs/arara-issue-12/7.%20Tech-illa%20Sunrise.%20Rafael%20Lozano-Hemmer%20&%20Guillermo%20G%C3%B3mez-Pe%C3%B1a.pp.79-86.pdf>

VNS Matrix: “a millionmillion con-
scious machines die
of screenflash burns



sucked in, down
through a vortex of
rose-gold retinas
a kinship move-
ment is being built
on the bones of
bleached coral,

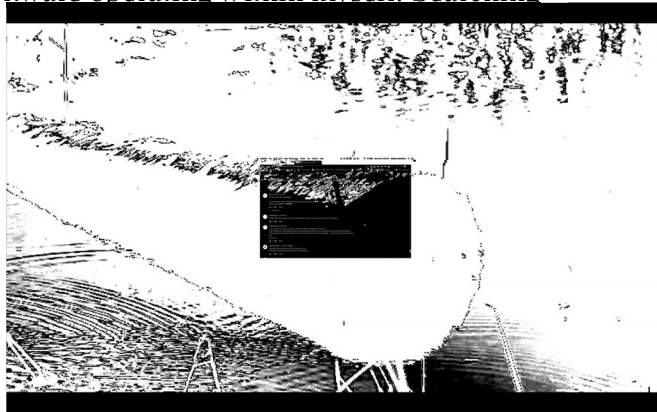
blooded ice pearls, delustred tantalum
and abandoned mines, no craft
the lands and the bodies quicken their
mycelial magics
whetting appetites for a new climate
radiant against the Rapture
the angel scribbles faster

history has hot wings of lead”¹⁷²

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VNS Matrix, “A Tender Hex for the Anthropocene” (2016) <https://vnsmatrix.net/wordpress/wp-content/uploads/a-tender-hex-for-the-anthropocene-vns-matrix-2016-text-artwork.pdf>

I approached poetry and creative writing through the idea of composition. Each poem held deep and personal conceptual framing but also a speakable rhythm. As I wrote the poems, I would speak them and repeat them, like a running code or software operating within myself. Searching for the right word, holding it, considering multiple meanings for it. The six modes for *OS/error* (*Searching, Functioning, Building, Aligning, Scripting and Scrolling*) are active words which I feel are meaningful to construct a technofeminist transformation of our social, spatial and technological world.



In *OS/error*, I applied mixing as a method to produce this poetic writing. It was an attempt to dismantle dualisms, speak across boundaries and communicate the material nature of digital technology. Through mixing seemingly separate words or worlds together, I could bridge the divide. The approach to structure my words in code poetry (a genre relatively unestablished) was purely suggestive and metaphorical rather than logical or computer readable. I wanted to straddle a line where anyone regardless of their experience with coding would be able to make sense but also where computers could still read and locate multiple errors in the syntax. The outcome of this writing became a hybrid language that reveals the already blurred nature of living technological systems.

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```
function(how, why)
function rules(YourActivity, YourPurpose)
determine your = “value”;
Uncaught.error
Your function(determined, programmed);
Your function(labeled, assigned);
shift
function as(natural to, intended for)
<a>person_thing
```

delete

```
require ‘user-defined-value’;
let variability = function(rule)
return ‘Trust’; 173
```

173

‘Functioning’ from *OS/error*

The poetry in *OS/error* is an incorporation of words and theory of others, together with my own experience and authorship in the world. I performatively typed the poems into multiple text fields on my computer and recorded countless screen videos of this activity. The choice of a certain text field and surrounding desktop or interface was critical. It made it possible to subvert the usual functionality of my computer operating system, generate errors and failures and use my computer in a queer way. This process was both exciting and surprising. While mixing the poetry into the video, I observed when new meanings arose and discovered powerful inter-relations amongst the layers of video.



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```
scrolling through {the_site}
scrolling through {you}
strolling through {it}
continue_um
scrolling
strolling
‘InfiniteScrolling’
reach (end)
‘NotFound’
you move through
‘TheInfinite’ 173
```

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‘Scrolling’ from *OS/error*

anna +siinga

“Collaboration means working across difference, which leads to contamination. Without collaborations, we all die.”¹⁷⁴

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Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (NJ: Princeton University Press, 2016)

Throughout the initial video making process, the sound component for the project remained outstanding and crucial. Eventually I asked my friend Aliisa Talja¹⁷⁵ to design the sound and she agreed. We planned a residency¹⁷⁶ located in the farmlands of Store Heddinge, Denmark, which made it possible to collaborate in a new environment and financially compensate Aliisa’s work. The residency became the place where Aliisa produced the sound and where I wrote the poetry and recorded/edited many of the videos. The location of the residency was within walking-distance from *Stevns Klint*, the UNESCO Heritage Site which is of geological importance for best exposing the Cretaceous–Paleogene boundary.¹⁷⁷

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www.aliisatalja.fi, <https://soundcloud.com/talja-aliisa>

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see figure 11. Social Service Club SSC The Farm Residency ‘A tool is a thought is a tool’ (February 2020) <https://socialserviceclub.io/>

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the boundary line embedded in the cliff rock is associated with the Cretaceous–Paleogene extinction event that occurred approximately 66 million years ago. This was a mass extinction which destroyed a majority of the world’s Mesozoic species, including all dinosaurs except for birds (Wikipedia) see *Stevns Klint* in figure 12.

Aliisa and I have collaborated together on prior projects and are both part of the platform *EFFORT/Design_Feminism_Helsinki*.¹⁷⁸



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My knowledge of video production and post-production is mostly self-obtained and has only deepened through creating visuals for Aliisa’s DJ sets. We have a history together that includes experiences of approaching new technological tools and software, and combining our different strengths through producing video and sound experiences. Composing *OS/error* brought Aliisa and I together to learn and make new work together. The experience of working together at the farm was fundamental in the progression of this thesis and for my relationship with Aliisa as a collaborator and friend.

Over the course of three weeks together at the farm residency, we mapped out the structure of *OS/error*, agreed on the framing of the tracks, and worked to compose many sound and video outputs. At the residency, we mostly worked separately but were involved in each other’s process through a light structure of recapping our activities, sharing samples and references. Working with Aliisa meant orienting toward accepting and letting in the contaminative aspects of my process which at this point included a human other. I wanted to remain open to this by softening my grip on the outcome of this work.

I recall an afternoon where I talked through my draft of the different OS modes. I would tell Aliisa about *Searching*, read the poem, and begin an experiential account: It’s about looking for meaning, sometimes realizing that it is not there, or that you make it, except you are not you, you are also it, so you construct meaning together, through clicking, sure also like mouse clicking, or better yet like particles touching...¹⁷⁹ Or *Scripting*: It’s about the way we communicate with each other, and that there are patterns and repetitions that can be harmful or problematic. It’s about making changes that at first feel awkward, into the script, for example, asking and not assuming or using a they pronoun until you are certain...¹⁸⁰

Aliisa would repeat back to me what resonated. Making sense

this way was incredibly rewarding and the vulnerability of this process speaks to our friendship. We worked together in a way where we composed sound and video samples, shared them with each other, and offered feedback. We mixed our sound and video design and watched it playback together. These moments were incredibly exciting, and I recall the feeling of anticipation right before both of us hit play, and then experiencing the unfolding of what we composed together.





FIGURE 11: ALIISA TALJA RECORDING SOUND AT THE FARM RESIDENCY IN STORE HEDDINGE, DENMARK. FEBRUARY 2020

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Once Aliisa finalized the six audio tracks, I worked further to re-edit the videos to synchronize them with the sound. The video became influenced by the sound, just as Aliisa's sound



was influenced by the video. At the end of the residency, we screened a draft version of *OS/error* to a group of organizers and local residents of the area. One guest of senior generation felt that through seeing the work she got insight into the world of her children. Another recognized specific environments through the video abstraction. Another said that they heard the sounds of home. Some asked technical questions and one person asked to keep a printed copy of the poems.

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www.efforthelsinki.fi

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Robynn McPherson, personal account from memory #1

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Robynn McPherson, personal account from memory #2

Sound Designer's Note:

The sound design for OS/error is based on three ideas: exploring the division into wanted and unwanted sounds, sonically blurring the boundaries between nature, human and technology, and recording and embracing the sound of failure.

The exploration of wanted and unwanted sounds is inspired by a Queer Noise Manifesto by the sound art duo Seroconversion.¹⁸¹ The manifesto parallels queer, as unwanted desire, to noise, as unwanted sound.¹⁸² Seroconversion writes: "Queer bodies can be interpreted as



FIGURE 12: STEVNS KLINT, ISLAND OF ZEALAND, DENMARK. FEBRUARY 2020.
PHOTO BY ROBYNN MCPHERSON

a form of noise that disturbs and distorts heteronormativity in radical ways and therefore opens up new ways for all of us to live our lives, perceive our bodies and express ourselves.”¹⁸³ In other words, both queerness and noise are shaking a norm, and thus powerful in making space for new paradigms.

In the sound design for *OS/error* I contemplate on this thought, not in the frame of gender and sexuality as *Seroconversion*, but by studying the overlaps of nature, human and technology. I explore some unwanted, unsettling, sounds that possibly blur those distinctions. I ponder on the sonic fluidity between the sound of a landscape, a plant, an animal, a human, a room and a device. And I wonder if this fluidity might challenge the norm of human exceptionality by exposing it as “socially produced norm and fiction.”¹⁸⁴

The audio in *OS/error* combines both characteristic and intentional, as well as ambiguous, unexpected or unrecognised sounds in and around us. In part, the making of *OS/error* was also about practicing to accept what I, in my classical music education, have learnt are “failures,” and paralleling that to failures in our normalised world views. Therefore I attempt to embrace unwanted sounds; slams, pops and squeaks; noise, background hum and distortion. I hope the music, together with the visuals, provokes to meditate on interconnect-edness, and supports in perceiving us humans, and our inventions, as variations of multiform nature, indivisible from our environment.

—Aliisa Talja

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Seroconversion, *A Queer Noise Manifesto* (2015)
<http://www.seroconversion.se/works/qnmanifest/qnmanifest.html>

182

Ibid. p.6

183

Ibid. p.6

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as Judith Butler claims queer bodies do to heterosexual hegemony (Butler in *Seroconversion*, p.6).

Sign in with a Google Account



ssword

Sign in with a different Google Account

One Google Account for everything Google



00:21



OS/error

Searching (5:13 min)

Functioning (3:18 min)

Building (2:42 min)

Aligning (4:38 min)

Scripting (3:49 min)

Scrolling (5:38 min)¹⁸⁵

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www.oserror.run (see appendix)

Composing the practical component *OS/error* is the outcome of my research and response to the questions: “*How can I communicate the softening boundaries of and between the human, the computer, and the environment, by way of technofeminism and visual communication design?*” and “*What does it mean to make with, collaborate with, or become a machine?*”¹⁸⁶

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Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, “Digital crafts-machine-ship: creative collaborations with machines,” *Interactions* 27, no.1 (December 2019), 30–35 <https://doi.org/10.1145/3373644>

When I imagined the practical component of this thesis, my original idea was to compose an album. The album (as a format for storytelling) is nostalgic and familiar and a basic system for compiling which has existed for generations. In many ways, an album is modular and systematic, but also with the potential to be unstructured, wild, and messy. The album is a compositional whole by way of highlighting the parts. The parts do not exist independently of the whole. Before *OS/error* came to actualization, I visioned an album that was substantial and autobiographical. I wanted to produce a project of a certain scale and intimacy. Through researching technofeminism and visual communication design, I found that video, poetry and sound were the elements

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of design practice that should be further explored and combined for the purpose of answering my questions.

In my questioning I found mixing and autotheory, as feminist methods that I put into practice. Autotheory as an applied method functioned through creating a personal performance, in space, on the screen and through writing, typing, filming and recording. It is how I brought (my)self, a body with history and subjectivity in connection with academic theory and ultimately into design form. It is my presence in the work, through movement, voice and writing, in so much as the application and presence of decisions through a freedom-seeking human ‘I’.

tara m@PHERSON “...scholars must engage the vernacular digital forms that make us nervous, authoring in them in order to better understand them and to recreate in technological spaces the possibility of doing the work that moves us.”¹⁸⁷

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Tara McPherson, “Why Are the Digital Humanities So White? or Thinking the Histories of Race and Computation” in *Debates in the Digital Humanities*, ed. Matthew K. Gold (University of Minnesota Press, 2012) <https://dhdebates.gc.cuny.edu/read/untitled-88c11800-9446-469b-a3be-3fdb36bfbd1e/section/20df8acd-9ab9-4f35-8a5d-e91aa5f4a0e9>

Through researching and ultimately composing *OS/error*, I have learned that any agent of posthuman and technological criticism must situate and articulate themselves through a rigorous lens of privilege and power, and also see themselves in the very systems that they critique, as much as in their process and aesthetic decisions. In working with autotheory as a method, I feel that I have been successful in doing that with this thesis, through communicating sincerity through personal authorship, and mixing experiential accounts with theory. I have found that this method carries a strong potential for communicating the softening boundaries of and between the human, the computer and the environment. Is there a risk for this type of work to rebound

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and become alienating? Maybe. The content of *OS/error* is indeed personal, a window to my intimate experience, an extension of my embodiment. “*The author is alive and well...*”¹⁸⁸ and the work is designed to be familiar enough to allow for others to make their own meanings.

<script>How can I...</script><script>...by way of...</script>
<script>...softening...</script><script>...the...</script>

In chapter 4 *Composing OS/error*, I unfolded my design process, through exploring how video, poetry, and sound (by way of technofeminism and visual communication design) can be used for communicating the softening boundaries of and between the human, the computer and the environment. There are many aesthetics for communicating *softening* or *softness*. In *OS/error*, softening boundaries required recognizing the existence of boundaries and grasping failure as a generative and essential process of boundary discovery and boundary re-formation. Mixing became an effective theoretical tool to apply practically to communicate this. I discovered that mixing the movements, sounds, content and signifiers of different technological environments was a powerful way to create an unsettling result of defamiliarization.

As an outcome, I understand *OS/error* as a technofeminist means of critique by way of visual communication design. I believe that *OS/error* has been successful in creating a queer abstraction, a speculative representation of reality and communicating a “*material-discursive*”¹⁸⁹ entanglement of matter and meaning. The practical outcome extends from a historical lineage of work which has combined technofeminism and visual communication design for the means of socio-political activism and the artistic communication of paradigm change.

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Kate Birdstall and Julie Drew, “Wanting Ourselves: Writing (And) The Postsexual Subject” in *Writing Posthumanism, Posthuman Writing*, ed. Sidney I. Dobrin (SC: Parlor Press, 2015)

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Karen Barad *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*, (Duke University, 2007)
<https://llib.eu/book/884681/fabe9a?regionChanged=&redirect=7046506>

Kristina Andersen / Ron
Wakkary / Laura Devendorf

/ alex mclean “...what does it mean to make with, collaborate with, or become a machine?”¹⁹⁰

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Kristina Andersen, Ron Wakkary, Laura Devendorf, and Alex McLean, “Digital crafts-machine-ship: creative collaborations with machines,” *Interactions* 27, no.1 (December 2019), 30-35 <https://doi.org/10.1145/3373644>

Composing OS/error required many technological tools to record, capture, and represent the human, the computer and the environment. This meant grappling with technology as an object and tool, a material aspect to think with and to think against. Aliisa Talja and I engaged with our personal computers, software, as well as borrowed cameras, sound recorders, tripods and mic stands. Many of these items were borrowed through Aalto University School of Arts, Design and Architecture in Finland, borrowed from friends, or obtained through free software sharing initiatives. The technology of our time is what provided Aliisa Talja and I with the means to record the movement and sounds of our landscapes, bodies, and machines and allowed the mixing of the human, the computer and the environment which would come to be in *OS/error*.

To compose *OS/error*, Aliisa and I used:

Hardware

MacBook Pro (Retina, 15-inch, Mid 2015)

Macbook Pro (13-inch, Mid 2010)

iphone 5s

AKG c411 PP microphone

Sennheiser MD-441 microphone

Zoom h5 microphone

M-audio Fast Track Pro soundcard

Sennheiser HD25 headphones

Beyerdynamic DT 900 headphones

Nikon D3100 DSLR camera

Panasonic HC-VX1 4K camcorder

LaCie Rugged 1TB External Hard Drive

Software

Mac OS X El Capitan 10.11.6

Mac OS X Sierra 10.12.6

Apple iOS 12.4.7

Adobe Premiere Pro CC 2018

Ableton Live 9 suite

Finally I want to mention that *OS/error* as a work of design, is not independent from the affective touch of machines, environments and other humans who became part of the making. After working for over a year on the practical component of the project, it is now that I am able to see the ways in which (my)self and the work was moved and shaped by the material otherness that I made this work with, that I came into contact with. In a sense, *OS/error* no longer feels like my creation, still I take responsibility for what's been created.



6 Conclusion

- 6.1 Concluding thoughts
- 6.2 Limitations and critical consideration
- 6.3 Further inquiries
- 6.4 Thanks and acknowledgments

At this point in this thesis – intended as the final conclusion – I’m conscious that I have left many paths unvisited, have neglected other perspectives, and surely not expressed myself in a way that speaks to all readers. I’m aware that this assembly of ideas still remains to take shape, have their strengths unfold, and be brought into deeper investigation and interpretation.

OS/error as a practical outcome softens the perception of separation and the boundaries of and between the human, the computer and the environment. The works that I reference and the project *OS/error*, highlight the importance of envisioning a world in constant relation, co-dependant, interconnected with human and nonhuman matter. In addition, the aesthetics challenge the notion of the human, the computer and the environment as concretely defined, and instead shows a critical re-imagining which proposes that matter is not fixed and forever materially entangled with otherness.

Now composed, *OS/error* has become a story, a memory, an operating system, a marker in/of time and space, “*a hybrid of machine and organism, a creature of social reality as well as a creature of fiction.*”¹⁹¹ I don’t yet know what the work will be able to do in the world. Completing the project leaves me with many unknowns and speculations. I understand *OS/error* still very much through my intentions: to produce an artistic act of defamiliarization, to stimulate critical thinking and to provoke questioning about the boundaries of and between the human, the computer and the environment. I trust that this written thesis manages to effectively articulate some of the successes, limitations and findings of that research.

This thesis has led me to find technofeminist discourse and follow its connections to critical posthumanism and queer theory, where I am with others, hopeful and inspired to technovision life in a post-anthropocentric world. *OS/error* as a project, and as an operating system, will not bring justice and reparation to the multiplicity of all who suffer, have suffered, and will suffer on Earth. In my foreseeable future, there is still much activist work to do. I am not exempt from the very real cultural anxieties about the near future – all the while knowing that my future holds a reliance on (and vision of) very specific forms of technological reproduction and progress. I am weary of transmuting paranoid fictions into truths and am working on envisioning

softer future realities with the materiality of this earth.

<script>...make with, collaborate with, or become...</script><script>...by way of...</script><script>...communication...</script>

In this thesis I focused my energy on locating oppressive forms of power which operate on and through foundational structures of digital technology. Without detaching myself from the matrix, I aimed to convey a world that is indeterminate and inexorably entangled. “*We are responsible for boundaries. We are they...*”¹⁹² ...for poetics though, if nothing else, *they* are glitches in the system, generating bewilderment, refusing what is known and exposing what is possible. I am with and for efforts to find creative ways to interrupt the mundanity of computer technology. I am with and for efforts to forge a radical politics fit for a period of system collapse and paradigm change. The reproduction of the earthly organism moves a diverse ecology of relations into existence, seeding a time and space for relational machines, relational environments and relational efforts.

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Donna Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” *Simians, Cyborgs and Women: The Reinvention of Nature* (New York; Routledge, 1991), 149-181, <https://theanarchistlibrary.org/library/donna-haraway-a-cyborg-manifesto-1>

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Ibid.

Start your search here..



00:46





00:14



In the practice of composing *OS/error*, there are areas where I feel I have not succeeded in aligning with my feminist ethics and ideals. There are also areas where I want to be more transparent about what enabled this work. In the production of this thesis, my collaboration with the computer was more than just circumstantial. This union stems from a great deal of access through privilege and from being embedded in a culture of rapid technological innovation. It stems from being in a culture and field of design that desires computers, or better or different work with better or different outcomes. As a designer who works digitally, in the sense of being both a user and maker of digital content and media today, I am using digital infrastructure which currently relies on resource extraction, non-renewable energy, infinite growth, among other gross injustices. Computer technology is not neutral, and my practice of design is not without significant contradictions I want to lament on.

Adobe Inc. is a computer software empire which is now 37 years old. The company is based in California along with Apple Inc. (44 years old) and this pair is arguably the most popular software/hardware combo used in the field of visual communication design today.¹⁹³ In reflecting further on the production of this work, I realize that I used designs from multiple centralized multinationals and companies that do not reflect my values. I supported options which are not free or open source. Supporting open-source programming and free software initiatives is a way to contribute to accessibility and decentralization of computer technologies. It is a way to support alternatives and a way to better align with technofeminism and digital activism.

Furthermore, to record, mix and produce the video and sound, I was able to borrow professional equipment from Aalto University, where I was also granted full access to books, academic journals and libraries. Access to these resources and materials reveals on a practical level what it required to make this thesis, and reveals the fruits of my institution affiliation. Many of the references and source I have cited have not made openly accessible to anyone and everyone. I want to be transparent about this as it raises important questions concerning the access, value and replicability of my work and other work deemed critical or postmodern which neglect to consider or articulate the

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conditions and privileges of the culture and society that made the work possible. I am left with considering: Who else can make this type of art or design research? Who else can read it, access and reproduce it? Which canon of designer-academics am I in?

Now that I have completed the written component, I am conscious about having stretched myself and this thesis broadly, by touching on several large domains of theory and many thinkers and writers who I encountered and whom I felt were important to include. This was in part due to encountering the feminist method of auto-theory, where I strived for inclusion and abundance in many ways. I recognize that this method may have also clouded the clarity and focus of my research. I want to clarify now that my approach to making this thesis was an eager one, that felt full of freedom and curiosity. The writing has become a recollection for myself of the thinkers I engaged with, and who informed me at the time of making this thesis.

In terms of accessibility of this text, I'm afraid that there are limitations to my style of scholarly writing. As a native English speaker with an inclination toward poetics, my strive for clarity of meaning through writing often presented me with the most obscure words, words that I also choose to use at the threat of enclosing myself narrowly with the audience who I am writing for.

In the practical component *OS/error*, I have incorporated writing poetry, making video and coordinating sound, thus combining multiple domains of art and design practice into one project. This process has a long narrative. I put myself in a deep relation with other species and material elements of the environment. In this sense, composing *OS/error* has been a meditative process, sometimes ritualistic. Perhaps a limitation is that I have not found a way to articulate the extent of the process thoroughly enough.

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multinational profit-based technology companies based in California. From a financial perspective, Adobe Inc. earned 11 billion USD in revenue in 2019 and Apple Inc earned 260 billion USD (Wikipedia)

Further into the future, I imagine a longer continued study where technofeminism will be a focus or a background for any research I engage in. I will seek continued collaboration, and find others to work together in the interest of gender, sexuality, the environment and technology. My work will be with other people, and in that process I will continue to learn about what it means to make with and collaborate with others.

This year, the distancing caused by the CO-VID19 pandemic brings me to slow down, and reflect further on crisis, loss and suffering. In the past six months I have needed to consider more deeply my boundaries with the personal computer. My critique, thoughts and emotions are cloudy. I feel as though I need to ask better questions, and to further consider the effects these new global changes bring to (my)self, culture and world. I am brought back to my original motivation and intentions at the beginning of this thesis, which were to bring technofeminist knowledge to others in different ways and formats.

As of now, I imagine this work could resemble creating dialogic and feminist learning environments and finding the methods and skills to care for and learn with others. I am interested in and have questions about performativity, fictioning, technovision / speculative realism and storytelling. Digital technology is evolving rapidly, becoming more abstract and at the same time more personal and intimate. The industry, its designs, power and devices are being ruthlessly theorized and critiqued. I am aware that feminist environments for learning, processing, healing and raising consciousness in this context need still continue.

I would like to acknowledge some words of advice and affirmation given to me along this thesis process from several people. Without them, this thesis would not have been the same. Thank you especially: Aliisa Talja, Arja Karhumaa, Donna Rogers, Juuso Tervo, Lisa Rein, Mikael Ruohonen, Rachel McPherson, Sara Kaaman, Tim Smith and EFFORT.

Dear Aliisa I can not imagine this thesis without you and your contribution to it. You embraced and encouraged my creative process throughout, and showed support even when my thoughts and direction were unclear. Thank you for introducing me properly to feminism and for living with me. You have helped me to find critical reflection and brought queerness into my life and practice.

Dear Arja In one of our meetings, you asked, how does my thesis concern the field of visual communication design? And also, what do the references I selected mean to me? These questions have been close with me. Thank you for keeping me along the track of field and practice, and in tune with visual communication design when at many times my reading and writing seemed to have led me away.

Dear Donna Conversation often feels very 4th field dialogue with you. Your excitement about my work was contagious and your belief in me stayed with me, whether said out loud or in the back of my mind. In this thesis you inspired me to think historically.

Dear EFFORT Thank you Eevi, Marja, Henna, Aliisa and Pauliina for sharing your experiences within the fields of art, design and feminism with me. Thank you for your solidarity and for establishing a platform which I have now become a

part of.

Dear Juuso Thank you for spelling out academic constraints, for showing me when they apply or don't. Thank you for your encouragement and critical eye while going my early drafts. Thank you for affirming me and for being as excited as I am about the word *composing*. Thank you for helping me to believe that I can (sort of) do whatever I want with this project.

Dear Lisa That academic writing course would not have been the same without you. Thank you for being a collaborator and friend. Thank you for caring about technofeminism with me.

Dear Mikael Thank you for listening during late nights at the kitchen table, for caring about dumpstered potatoes and for sharing your comforting home-grown meals. You are a crucial part of my daily life.

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Dear Sanna You haven't known me without this thesis in my life. Just you wait! Thank you for listening for over two hours while I read to you my first draft and for editing my near final version. Your honesty is with me and this thesis would not be the same without your input, love and support.

Dear Rachel Thank you sister for spiraling with me during long distance phone calls.

Dear Tim You told me that the sound would be important in my practical component and I took your advice seriously. You also told me that video is one of your favourite artistic mediums and then I knew it must be powerful. In our advising meetings you shared with me helpful experiences from your own MA thesis process. I am so thankful for all these moments.

In addition, thank you Ester Martin Bergsmark for those insightful conversations over breakfast that had me running back to my text to make critical edits and to Laura Valojärvi for providing excellent feedback and supervising the submission of this thesis. I also want to thank Paul Soulellis from *Queer.Archive.Work* for including a printed version of *OS/error* in the publication *Urgency Reader 2: Mutual Aid During Crisis*¹⁹⁴ in June 2020. Thank you Carla Cammilla Hjort, Nicole Jonasson and Nadja Christensen at Social Service Club for supporting the production of *OS/error* through the SSC Farm Residency in February 2020 and to Lucas LaRochelle and Willem Van Hooff for being co-residents during that residency.

I extend a final recognition to Aalto University, as the institution which has granted me the right to study tuition-free in Finland and produce this thesis as an international student from Canada. Thank you. This was an absolute privilege and opportunity that should be made available for all international students once again.

¹⁹⁴
Urgency Reader 2: Mutual Aid During Crisis, edited by
Paul Soulellis ed. (RI: *Queer.Archive.Work*, June 2020)
<https://soulellis.com/work/urgencyreader2/index.html>

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Location

Not Connected

None of the servers in the network is reachable.
Click Advanced

Configure IPv4: Using DHCP

IP Address:

Subnet Mask:

Router:

DNS Server:

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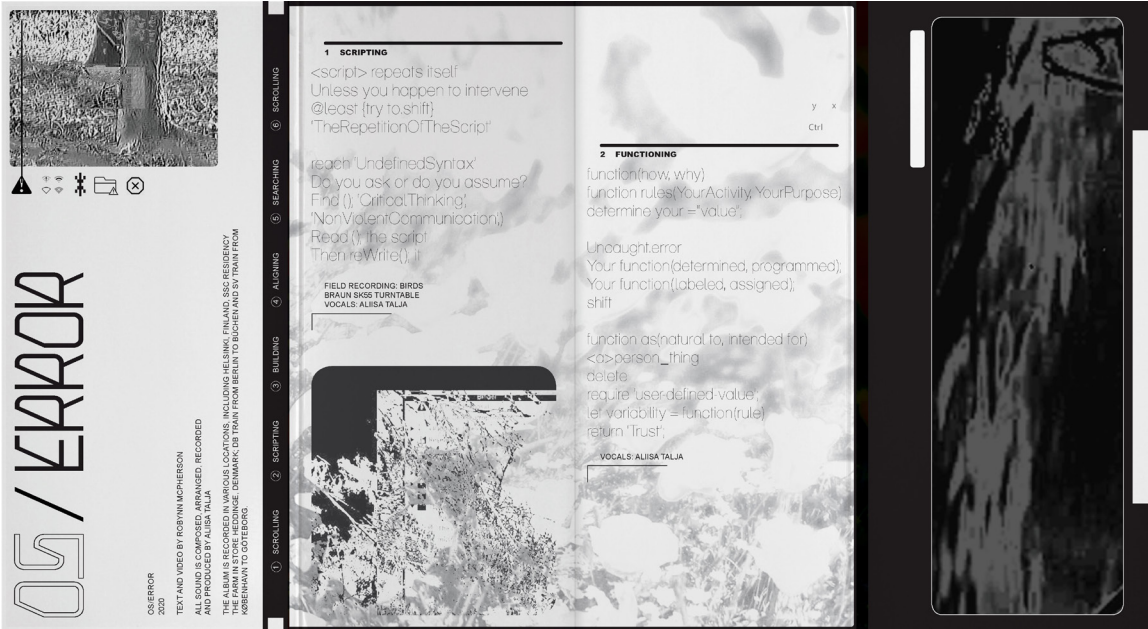
Z

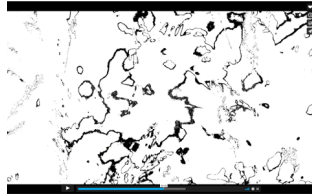
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* Appendix





145

SEARCHING

*you are searching
with_intention to_
you are browsing
without_intention to_*

*if 'searching'
then 'SearchingForContent'
you find something that catches you
something finds you and catches you
click
you are searching to click
today
527 clicks*

146

OBOE: ALIISA TALJA

function(how, why)
function rules(YourActivity, YourPurpose)
determine your = “value”;

Uncaught.error
Your function(determined, programmed);
Your function(labeled, assigned);
shift

function as(natural to, intended for)
<a>person_thing
delete
require ‘user-defined-value’;
let variability = function(rule)
return ‘Trust’;

147

148





149

BUILDING

*if <body>
then 'HackableStructure';
ctrl
if <body>
then 'EditableTemplate';
alt
if <body>
then 'NeverPure';
delete
if (digital)
then of 'TheFingers'
open source <body>
edit
+ Add section
- Remove section
Transform_with_intention*

150

*import stylesheet: 'Gender'
apply <header> to <footer>
shift
edit(CommonSense)*

FIELD RECORDING: MIGRAINE ATTACK,
TWO MACBOOK PRO 13", MACBOOK PRO 15",
AKG C411 PP MICROPHONE



align: NatureHorizontalLandscape;
x-value
align: HumanVerticalPortrait;
y-value
build(web, mesh, net, matrix)

StraightLineBreak
attempt(); (wanderFrom, deviateFrom)
shift
Norm
if
attempt(); alt;
execute(); newly.logical.alignment;
then
return 'BaselineGrid';



153

SCRIPTING

*<script> repeats itself
unless you happen to intervene
@least {try to.shift}
'TheRepetitionOfTheScript'*

*reach 'UndefinedSyntax'
do you ask or do you assume?
find (); 'CriticalThinking',
'NonViolentCommunication',)
read (); the script
then reWrite(); it*

154 FIELD RECORDING: BIRDS
BRAUN SK55 TURNTABLE
VOCALS: ALIISA TALJA

*scrolling through {the_site}
scrolling through {you}
strolling through {it}
continue_um
scrolling
strolling
'InfiniteScrolling'
reach (end)
'NotFound'
you move through
'TheInfinite'*

